United States. Bureau of
Foreign and Domestic Commerce
Russia : a handbook on
commercial and industrial
conditions

UNIVERSITY OF TORONTO
3 1761 00266901 8

HC
335
U653
1913

DEPARTMENT OF COMMERCE
BUREAU OF FOREIGN AND DOMESTIC COMMERCE
A. H. BALDWIN, Chief

SPECIAL CONSULAR REPORTS—No. 61

RUSSIA

A HANDBOOK ON COMMERCIAL AND INDUSTRIAL CONDITIONS

By

JOHN H. SNODGRASS
American Consul General at Moscow
and
Other Consular Officers

WASHINGTON
GOVERNMENT PRINTING OFFICE
1913

DEPARTMENT OF COMMERCE
BUREAU OF FOREIGN AND DOMESTIC COMMERCE
A. H. BALDWIN, Chief

SPECIAL CONSULAR REPORTS—No. 61

RUSSIA

A HANDBOOK ON COMMERCIAL AND INDUSTRIAL CONDITIONS

By

JOHN H. SNODGRASS
American Consul General at Moscow
and
ther Consular Officers

WASHINGTON
GOVERNMENT PRINTING OFFICE
1913

Digitized by the Internet Archive
in 2010 with funding from
University of Toronto

HC
335
U653
1913

http://www.archive.org/details/russiahandbookon00unit

CONTENTS.

	Page.
Letter of submittal	5
Introduction	7
Commerce:	
Foreign trade	11
Domestic trade	19
Financial review for 1912:	
The money market	21
Bourses and cooperative credit societies	23
Government and municipal finances	26
Transportation and communication	29
Inland waterways	29
Deep-sea shipping	33
Railway systems	33
Depot and express facilities	37
Postal service, telegraphs, and telephones	38
Travel in Russia	41
Industrial development	44
Leather trade	49
Chemical industry	52
Manufacture of paper	56
Manufacture of farm implements and machinery	58
Rubber goods	59
Cement	59
Matches	60
Peasant industries	60
Agricultural and pastoral development	67
Cereals	69
Potatoes	72
Sugar	74
Tobacco	76
Cotton	79
Flax and hemp	84
Hops	86
Silk	86
Oilseeds	89
Fruit	91
Minor crops	95
Live stock and dairy farming	96
Poultry	103
Apiculture	104
Forests, fisheries, and fur trade:	
Forests	106
Fisheries	109
Fur market	119

Page.
Mining and metallurgy 123
Precious metals 124
Copper, iron, and manganese 127
Coal 131
Petroleum 133
Asbestos 136
Salt 137
Fairs 138
Zemstvos and cooperative societies 140
Review by consular districts:
Batum 150
Moscow 167
Odessa 169
Nikolaief 183
Eupatoria and Novorossisk 185
Riga 186
Libau 193
Windau 195
St. Petersburg 197
Finland 203
Warsaw 210
Siberia 215
Transbaikal Province 220
Yakutsk Province 223
Sakhalin Province 226
Kamchatka Province 228
Amur Province 231
Maritime Province 236
Bibliography:
Publications of the Bureau of Foreign and Domestic Commerce 249
Reference works on Siberia 250
Foreign corporations in Russia 252
Russian weights and measures 255

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE,
BUREAU OF FOREIGN AND DOMESTIC COMMERCE,
Washington, August 29, 1913.

SIR: I submit herewith a handbook on commercial conditions in the Russian Empire, by John H. Snodgrass, consul general of the United States at Moscow. In addition to a general description of the economic situation in Russia, compiled in the Consular Division of this Bureau from consular reports and other sources, this monograph includes the annual reports on commerce and industry furnished by the American consuls stationed in Russia. It is believed that the combination of these reports in this manner will make them more readily available for the use of those interested in Russia's trade and general development.

Respectfully,

A. H. BALDWIN,
Chief of Bureau.

To Hon. WILLIAM C. REDFIELD,
Secretary of Commerce.

RUSSIA.

A HANDBOOK ON COMMERCIAL AND INDUSTRIAL CONDITIONS.

INTRODUCTION.

The Russian Empire, possessing a greater area of contiguous territory than any other country in the world, is still in a comparatively early stage of commercial development, although the foreign commerce of European Russia alone, including Finland, amounted to more than $1,261,000,000 in 1912. The possibilities of trade in this vast territory are little known to the great mass of business men in the United States, and it is with the object of giving a general view of economic conditions in that country that this monograph has been prepared.

The total area of Russia, both in Europe and Asia, is 8,505,957 square miles, or one-seventh of the land area of the globe, while its population in 1911 was only 160,000,000, or about 20 per square mile. This is a smaller number of inhabitants in proportion to its territory than is possessed by the United States, where there are 32.08 persons for each square mile, while Germany has a density of population of 310.96 to the square mile, France has 191.19 to the square mile, Austria-Hungary 195.78 to the square mile, and Sweden 32.17 to the square mile. In fact the Russian Empire as a whole is only slightly more thickly settled than Norway and Mexico, which average 19.19 and 19.7 inhabitants per square mile, respectively.

In 1910, 13 per cent of the population of European Russia proper, 23.1 per cent of the population of Russian Poland, 12.9 per cent of the population of the Caucasus, 11 per cent of that of Siberia, 13.5 per cent of the population of Central Asia, and 14.6 per cent of the population of Finland lived in towns.

ADMINISTRATIVE DIVISIONS.

The Empire is divided into six great parts: European Russia proper, Finland, Poland, the Caucasus, Siberia, and Central Asia, which are in turn divided into Provinces, known as Governments, or, in Finland, as Läns. The Governments are subdivided into districts, and the districts into divisions.

Russia proper, with an area of 1,883,870 square miles, is made up of 50 Governments, and extends from the Arctic Ocean to the Black Sea and the northern border of the Caucasus, and from the Ural Mountains to the eastern boundaries of Austria-Hungary. Russian

Poland, and Germany and the Baltic Sea. In reports on the commerce of this region reference is frequently made to further general subdivisions of European Russia proper, which are known as Great Russia, the central part of the country; the Baltic Provinces; West Russia and Little Russia, west and southwest of Great Russia; South Russia, bordering on the Black and Azof Seas; Astrakhan; the Ural Governments; and Orenburg.

The high average density of population of the southern and central agricultural and industrial regions of Russia proper is reduced by the great sparsely settled subarctic region to about 63 to the square mile.

Russian Poland, on the west, bordering on Germany and Austria-Hungary, is divided into 10 Governments, has an area of 49,579 square miles, and is the most densely populated section of the Empire, with an average of 248 inhabitants to the square mile. It is slightly more thickly settled than the State of Connecticut, which in 1910 had 231 to the square mile.

Finland, with an area of 144,249 square miles, is divided into 8 Läns. Its population in 1911 was 3,115,000, or 21.59 per square mile. For administrative and statistical purposes Finland is regarded as distinct from the rest of the Russian Empire.

THE CAUCASUS AND ASIATIC RUSSIA.

The Caucasus, lying between the Black and Caspian Seas, has an area of 183,249 square miles, divided into 14 Governments, and comprises the two regions of Transcaucasia and Ciscaucasia. Its population in 1910 was 11,735,100.

Asiatic Russia is made up of the 10 Governments of Siberia, with an area of more than 4,800,000 square miles, and the 9 Governments of Central Asia. Siberia is the least densely settled portion of the Empire, with an average of 1.6 persons per square mile, and Central Asia is also sparsely settled, with the exception of the fertile irrigated plains of Turkestan. The Governments of Siberia are often grouped under the heads of Western Siberia, comprising the Governments of Tobolsk and Tomsk; Eastern Siberia, consisting of Yeniseisk, Irkutsk, Yakutsk, and Transbaikalia; the Amur-Primorskaia region, along the Amur River and the Pacific coast, including the northern half of the island of Sakhalin; and the steppe Governments of Akmolinsk and Semipalatinsk.

PHYSIOGRAPHY OF EUROPEAN RUSSIA.

Physiographically and in its vast natural resources, Russia resembles the United States in many respects. The great part of European Russia is a low plain, 300 to 600 feet above sea level, rising in a few places to 1,000 feet. The Ural Mountains and the Caucasus Range, with its continuation, the Jaila Mountains, are the only great elevations in the European section of the Empire. The climate of this great plain is, in general, colder in winter and hotter in summer than that of the same latitudes of western Europe. Along the Black Sea grapes and silk are grown, while at the extreme north are the frozen plains that border the Arctic Ocean. The average

rainfall is not over 20 inches a year, although in the western half of European Russia the annual precipitation is from 20 to 40 inches, and in some parts of the south it amounts to 80 inches and over.

As regards its soil and its agricultural possibilities, European Russia may be divided into five regions, viz:

The treeless land or tundra along the Arctic coast, where reindeer moss, lichens, and stunted shrubs make up the plant life.

The forest region, south of the tundra, extending down into the central part of the country, and covering more than one-third of its area, affording great timber resources.

The Black Earth region, so-called from the dark, rich, vegetable humus that covers it to varying depths and makes it the great farming region of the Empire. This zone is the great wheat-growing belt of Russia, and also produces most of the root, grain, and fiber crops. It stretches across the country in a broad band south of the forest lands.

The fertile steppes of the south and southwest, which afford grazing land for large numbers of cattle, sheep, and horses, and are also being developed into areas for general farming.

The sterile salt steppes of the southeast, unfertile on account of the lack of moisture and inhabited only by nomads.

CLIMATE AND SOIL OF SIBERIA.

In Siberia, the region between the Arctic Circle and the Arctic Ocean is a frost-bound waste, growing only arctic mosses and lichens, and inhabited by nomadic hunters and fishermen. The ivory tusks of extinct mammoths are dug from the ice and frozen soil of this region. South of the tundra is a vast area of coniferous forests, extending from the Ob River to far beyond the Lena, yielding lumber and abounding in fur-bearing animals. The agricultural lands of Siberia are in the southern part, extending down to the Chinese border. The Black Earth region of European Russia continues eastward into the southern part of Tobolsk and through the middle of Tomsk, making those Governments particularly attractive to colonists. Good farm lands extend beyond the Black Earth belt almost to Irkutsk, and domestic animals are raised and large crops of wheat, rye, and oats obtained in spite of the cold climate. The agricultural lands also include the sparsely settled regions in the river basins of the Amur and the Ussuri, in southeastern Siberia, and immigration is being directed to that region. Wheat thrives in western Siberia, but is a poor crop in the wet regions of the Amur Basin. Cattle are most numerous near the large towns.

GOVERNMENT ENCOURAGEMENT OF AMERICAN TRADE.

The necessity for the development of direct commercial connections between Russia and the United States is recognized by the Russian Government, and steps have recently been taken to foster this trade. Russia is and will be for some time to come largely dependent on other countries for the manufactured goods which it requires, while it supplies a large volume of crude and semimanufactured products required by other countries. The United States offers a good source of supply for the articles which Russia needs to import and also a market for many of Russia's principal exports. At present the trade between the two countries is largely in the hands of middlemen in other countries of Europe, who take a profit that might possibly be divided between the two countries.

With the object of promoting direct trade between the United States and Russia, the Imperial Government early in 1913 sent Mr. C. J. Medzikhovsky, who is particularly well informed as regards commercial and economic matters in Russia, as attaché to the Russian legation in Washington, D. C. Mr. Medzikhovsky has expressed himself as willing to supply any information regarding Russia desired by American business men and as being equally ready to aid in the exportation of American goods to Russia and in the importation of Russian goods into this country.

Mr. Medzikhovsky has at his command complete information regarding all laws affecting business interests in Russia, shipping routes and freight rates from this country to Russian points, industrial and market conditions throughout Russia, customs tariffs, etc., and can supply the names and addresses of dealers in various lines of goods in Russia. The address of the commercial attaché is 2605 Connecticut Avenue, Washington, D. C.

A statement of the laws and treaty arrangements covering American firms doing business in Russia has been prepared by Mr. Medzikhovsky and is appended to this monograph.

COMMERCE.

FOREIGN TRADE.

Russia's foreign commerce consists chiefly in the exchange of the raw and semimanufactured natural products of the country for the manufactured articles which it is as yet unable to supply in sufficient quantities for its home demands.

Russia's foreign trade across the European, Caucasian, and Black Sea frontiers, including Finland, aggregated $1,267,690,500 in 1912, as against $1,306,389,200 in 1911, a decrease of $38,698,700. The excess of exports over imports amounted to $202,153,500, which is $50,891,700 less than the corresponding excess in the preceding year.

The following table shows the growth of the foreign trade of European Russia during the past five years.

Years.	Imports.	Exports.	Years.	Imports.	Exports.
1908	$391,623,500	$483,466,000	1911	$526,672,000	$779,717,200
1909	404,745,200	704,087,900	1912	532,768,500	734,922,000
1910	490,558,100	712,695,600			

The official figures for the foreign trade of European Russia, by countries, are given in the following table:

Countries.	Imports.		Exports.	
	1911	1912	1911	1912
United States	$51,918,700	$44,134,000	$6,935,500	$9,267,400
Austria-Hungary	17,398,800	16,507,300	34,984,000	37,801,000
Belgium	3,389,200	3,737,400	28,543,400	30,308,300
China	6,352,500	7,083,300	849,200	1,343,600
Denmark	3,958,800	3,319,200	18,336,600	19,613,800
East Indies	12,573,200	13,216,400	9,300	30,400
Egypt	4,039,700	1,608,300	1,647,000	2,717,600
France	28,927,500	28,411,500	46,768,700	50,470,500
Germany	245,572,100	267,343,700	252,591,500	233,677,600
Italy	9,015,600	8,054,600	27,145,100	27,024,600
Netherlands	8,988,300	9,861,700	97,231,500	79,306,900
Norway	4,542,300	5,279,300	5,127,800	2,494,700
Persia	68,000	69,000	37,600	183,900
Portugal	1,244,700	767,300	56,100	353,800
Roumania	1,366,800	1,001,700	15,305,300	10,554,900
Spain	995,500	1,249,900	2,346,800	1,418,800
Sweden	5,046,000	5,495,600	4,604,100	5,131,500
Switzerland	3,703,400	1,629,500	[1]	[1]
Turkey	4,867,800	7,989,200	16,662,800	14,746,000
United Kingdom	79,245,600	71,713,700	173,348,000	168,501,300
All other countries	12,856,500	12,298,700	19,547,900	14,645,100
Total	506,071,000	510,771,300	752,078,200	709,591,700
Finland	20,601,000	21,997,200	27,639,000	25,330,300
Grand total	526,672,000	532,768,500	779,717,200	734,922,000

[1] Included in "All other countries."

IMPORT TRADE IN DETAIL.

The values of the different groups of imports during the past five years are shown by the following table:

Years.	Food products.	Raw and semi-manufactured products.	Live stock.	Manufactured products.
1908	$65,046,600	$211,617,100	$762,200	$114,197,600
1909	60,157,100	211,735,600	799,800	132,052,700
1910	62,504,000	265,367,200	1,580,000	161,106,900
1911	69,079,000	266,279,700	1,781,400	189,531,900
1912	72,202,000	265,877,500	1,329,200	193,359,800

The greatest increase was shown by the imports of manufactured articles, followed closely by food products, but in neither class was the increase as great as that noted in 1911. Among the manufactured goods, the heaviest gains were shown by agricultural machinery, paper and paper goods, and iron and steel goods, while general iron and steel machinery and cotton goods fell off. Among foodstuffs, salt herrings, coffee, and unspecified fish showed the greatest increases, and wheat and rye the heaviest losses. Gains of more than $6,000,000 in coal, $2,500,000 in raw rubber, $1,500,000 in raw wool, and $1,000,000 each in chemical products, tin, lead, and raw jute, with smaller increases in other items, were more than offset by losses of more than $12,000,000 in the imports of raw cotton, $4,500,000 in combed, spun, and twisted wool, $2,000,000 in leather, $1,000,000 in tanning materials, and smaller amounts in other lines, causing a slight decrease in the imports of raw and semimanufactured products.

VALUE OF PRINCIPAL ARTICLES.

The value of the principal articles imported into Russia over the European, Caucasian, and Black Sea boundaries during the past two years is shown by the following table:

Articles.	1911	1912	Articles.	1911	1912
Agricultural implements	$1,168,535	$1,033,605	Carpenters' and coopers' wares	$583,910	$402,215
Aluminum:			Carriages and parts	593,795	859,535
Ingots, etc.	475,345	270,890	Cars:		
Bar, rod, and sheet	52,015	106,090	Electric	356,895	292,005
Apparatus:			Horse	70,040	37,595
Cinematograph	700,975	868,290	Cast-iron ware	1,558,390	1,636,155
Electric supplies	2,005,605	2,615,170	Cattle	1,012,490	668,470
Incandescent lamps	1,344,150	1,961,120	Celluloid	729,180	735,420
Medical	330,115	281,190	Ceramic pipes, common pottery, etc.	1,109,310	1,311,190
Optical and mathematical	2,406,595	2,636,285	Cheese	640,660	604,610
Photographic	151,925	160,680	Chemical and pharmaceutical products	11,679,170	13,190,180
Telephone and telegraph	144,715	124,115	China and porcelain ware	795,675	828,120
Arms and ammunition	1,110,855	1,137,120	Chocolate	508,820	583,495
Asbestos, and manufactures of	150,380	149,865	Clocks and watches	1,541,395	1,570,750
Automobiles and motor cycles	5,106,225	5,787,055	Clothing:		
Baskets and plaited ware	453,200	374,920	Gent's furnishings	163,255	206,000
Beads, jet and glass	361,540	363,590	Women's and children's	936,270	1,156,175
Bicycles and parts	991,890	1,068,625	Coal	17,004,270	23,240,920
Books and pictures	1,419,340	1,331,790	Cocoa:		
Bricks and tiles	594,825	801,850	Raw	1,144,845	1,347,755
Building materials	2,384,795	3,152,880	Powder	882,710	770,955
Buttons	952,750	1,101,070	Coffee, raw	4,072,105	4,848,725

Articles.	1911	1912
Coke	$3,083,365	$3,994,340
Colors and dyestuffs	6,825,295	6,505,995
Copper:		
Bar, rod, and ingot	2,425,650	2,688,300
Sheet		199,305
Wares	4,928,035	5,125,280
Copra	8,110,220	8,040,180
Corals	300,245	168,405
Cordage and rope	1,770,056	1,922,495
Cork bark	2,773,790	2,499,810
Cotton, and manufactures of:		
Raw	54,522,020	42,038,420
Yarn	6,785,125	6,548,740
Goods	5,831,860	4,905,375
Velvet and plush	1,678,900	1,530,580
Cutlery	663,835	695,765
Fats	6,685,215	6,224,805
Feathers and down	114,845	120,510
Feathers for trimmings	400,145	369,255
Fertilizers	3,711,090	4,674,140
Fish:		
Herring	11,125,030	12,545,915
Other	4,353,295	5,068,630
Flax and hemp, raw	247,715	257,500
Flax, hemp, and jute yarn	125,660	175,615
Flour	53,045	48,000
Fruits and berries:		
Dried		1,102,100
Fresh—		
Grapes	5,883,330	248,745
Lemons		1,688,685
Oranges		2,334,495
Other		768,380
Furs	4,595,860	4,696,800
Gelatine	92,185	110,210
Glassware:		
Mirrors	172,525	260,075
Other	1,611,435	1,863,785
Glue	98,365	125,145
Gold ware	646,840	635,510
Gold and silver ribbon and brocade	577,830	415,605
Gold and silver, thin sheets	32,960	35,020
Grains:		
Barley	72,100	82,400
Corn	127,205	141,625
Oats	186,945	325,480
Rye	3,374,280	2,869,065
Wheat	970,775	421,785
Graphite	213,210	160,680
Grinding and polishing materials	1,033,090	540,235
Gums	887,345	769,925
Guts (casings)	110,725	263,680
Haberdashery and fancy articles	2,963,310	2,645,040
Hair and bristles	285,825	330,630
Hats and caps	685,980	767,350
Hides and skins	8,549,000	7,878,985
Hops	418,695	482,555
Horses	662,805	521,180
Instruments, musical	4,516,035	3,626,115
Iron and steel:		
Iron—		
Cast	1,429,640	2,398,355
Bars and rails	1,058,840	314,665
Sheet		814,215
Pyrites	504,700	678,770
Steel—		
Bars and rails	516,030	439,810
Sheets		170,980
Wares	6,550,285	7,473,680
Jute, raw	4,661,265	5,674,785
Knit goods and trimmings	4,312,610	3,947,475
Laces and embroideries	3,255,830	3,475,735
Lead, pig, sheet, etc	3,108,025	4,248,750
Leather	10,182,065	8,023,700
Leather, manufactures of:		
Machine belts	1,166,990	1,239,090
Shoes	510,880	797,735
Trunks	237,930	306,425
Other	406,327	285,825

Articles.	1911	1912
Linen and jute sacks	$388,825	$109,695
Linen and hemp goods	1,203,555	1,316,340
Liquors	2,988,545	2,436,980
Lumber	3,600,365	3,984,555
Machinery:		
Agricultural—		
Chaff cutters	197,760	301,275
Harrows	794,130	1,080,985
Hay tedders	2,103,775	1,461,055
Manure spreaders	121,025	118,965
Parts of agricultural machinery	299,215	673,105
Plows	1,463,630	1,785,505
Plows, steam	61,285	268,830
Presses	47,895	108,150
Reapers and binders	10,116,145	11,097,735
Separators and churns	443,415	136,505
Seed drills	1,043,905	1,542,425
Threshers	745,720	825,545
Threshers, steam	2,957,130	2,371,575
Winnowers	488,735	544,870
Other	2,382,905	3,584,915
General—		
Compressors	184,885	337,325
Dynamos, electric	2,766,065	3,062,705
Engines, gas and naphtha	4,297,160	4,604,615
Engines, steam	2,124,890	1,723,190
Engines, traction	4,641,180	3,916,575
Ice-making and refrigerating	23,690	11,000
Knitting and embroidery	50,985	40,000
Locomotives	323,934	361,015
Metal working	3,786,280	4,131,545
Meters, water and gas	109,695	87,550
Milling	275,010	333,205
Paper mill	30,900	54,590
Parts of machinery	5,739,675	7,214,635
Printing	899,190	659,715
Pumps	1,659,845	2,728,470
Sawmill	795,675	795,160
Sewing	4,564,960	3,318,145
Textile	1,473,415	586,585
Transformers, electric	240,505	246,685
Typewriters	656,625	624,695
Other	16,077,270	14,685,700
Marble	608,730	476,375
Mineral water	849,750	889,920
Mother of pearl, amber, etc	371,315	322,390
Music sheets and books	90,125	81,370
Needles	217,845	220,935
Nets, fish	278,615	297,670
Nickel:		
Ingots, etc	1,312,220	1,504,315
Bar, rod, and sheet		46,350
Nuts	1,895,200	2,165,575
Oils:		
Cod liver	135,960	129,265
Cod liver and spermaceti, not purified	76,220	145,230
Cocoa	313,635	303,850
Coconut	150,380	98,880
Lubricating	573,195	601,005
Olive and wood	1,371,445	1,699,500
Palm	354,320	572,165
Spermaceti	113,845	93,215
Animal, n. e. s.	363,675	56,650
Vegetable, n. e. s.	160,165	83,945
Olives	329,080	373,375
Paper, and manufactures of	12,537,115	13,622,780
Paraffin	680,830	554,140
Pearls, real and artificial	88,580	263,680
Peas	94,760	98,880
Platinum ware	181,280	129,780
Postal cards	467,105	543,325
Potatoes	19,570	23,175

Articles.	1911	1912
Pulp, paper	$961,505	$979,015
Quicksilver	144,715	162,225
Rags	621,090	746,750
Rice	1,495,045	2,041,975
Rosin	2,623,925	2,467,365
Rubber:		
Raw and waste	14,665,615	17,607,850
Manufactures	782,840	901,765
Salt	118,450	122,470
Scales and weights	293,550	263,680
Seeds and plants	3,294,970	3,060,130
Silk, and manufactures of:		
Raw and waste	12,784,875	12,660,245
Spun and twisted	975,410	863,140
Yarn	268,830	390,885
Manufactures	2,831,470	2,739,800
Silkworm eggs	296,640	313,120
Silverware	552,595	518,605
Soaps and cosmetics	1,982,235	2,014,680
Spices	1,786,535	1,997,170
Starch	103,000	110,210
Stationery supplies	1,002,190	955,325
Sweets	387,280	460,410
Stone:		
Articles of	1,222,610	236,385
Blocks		315,180
Lithographic		142,655
Rough and sand		578,345
Slate		75,000
Whetstone		188,490
Other		68,170
Stones, precious and semi-precious	1,055,750	969,230
Tanning materials	4,099,400	3,017,900
Tar and pitch	417,665	826,575
Tea	15,083,320	15,086,455
Tin, and manufactures of:		
Pig, sheet, etc	$4,365,655	$5,845,250
Manufactures	2,868,550	2,608,990
Tobacco	723,060	743,145
Tools, hand	2,832,500	2,511,655
Toys	139,050	152,955
Turpentine	274,495	266,770
Vegetables, n. e. s	748,295	998,070
Vessels:		
Iron, sea	1,561,480	1,557,875
Wooden	107,635	144,715
Wadding, hygroscopic and antiseptic	409,940	400,155
Wax, bees'	2,612,080	3,134,805
Wine	6,300,510	5,960,610
Wire	1,029,485	860,565
Wire manufactures	1,839,580	1,805,590
Wood, and manufactures of:		
Furniture	1,910,135	2,118,710
Parts of machinery	213,210	531,480
Woodwork—		
Carved	278,615	370,800
Other	239,475	316,725
Wool, and manufactures of:		
Raw	21,986,380	23,559,705
Dyed	235,355	244,625
Combed, spun	13,012,505	8,296,135
Piece goods	6,373,636	6,891,730
Machine belting	693,705	665,380
Zinc, pig, sheet, etc	2,526,075	2,787,180
All other articles	6,603,632	6,078,795
Total	526,671,960	532,768,530

SOURCES OF PRINCIPAL IMPORTS.

The sources of some of the principal imports in 1912 are shown in the following table:

Articles.	Value.
Agricultural implements:	
Austria-Hungary	$504,700
Other countries	528,905
Buttons:	
Austria-Hungary	125,660
Germany	921,334
United Kingdom	8,755
Other countries	45,321
Chemicals and pharmaceutical products:	
Austria-Hungary	139,050
France	374,405
Germany	8,852,335
Holland	290,975
Italy	201,880
United Kingdom	1,237,030
Other countries	842,540
Clocks and watches:	
Germany	1,166,475
Other countries	404,275
Coal and coke:	
Austria-Hungary	1,849,880
Germany	11,700,800
United Kingdom	13,161,855
Other countries	522,725
Coffee:	
Austria-Hungary	181,795
France	167,890
Germany	2,966,915
Holland	302,820
Italy	13,905
United Kingdom	265,325
Other countries	960,175
Cotton goods:	
Germany	4,941,940
United Kingdom	530,450
Other countries	963,565
Cotton yarn:	
Austria-Hungary	$323,935
Germany	3,048,285
United Kingdom	2,693,965
Other countries	482,555
Dyestuffs and colors:	
Austria-Hungary	148,320
France	444,445
Germany	4,851,815
Holland	174,070
United Kingdom	273,465
Other countries	613,880
Fertilizers:	
Belgium	91,155
Germany	2,865,975
Holland	693,705
United Kingdom	572,165
Other countries	451,140
Fruits and berries:	
Austria-Hungary	560,885
France	106,605
Germany	1,281,835
Great Britain	40,000
Italy	2,073,390
Over the Asiatic frontier	3,563,285
Other countries	2,062,230
Furs:	
Germany	4,015,970
Other countries	680,830
Hides:	
Austria-Hungary	176,130
Belgium	685,465
France	110,210
Germany	5,893,660
Holland	259,045
United Kingdom	114,330

Articles.	Value.
Hides—Continued.	
Other countries	$640,145
Iron:	
Cast—	
Germany	1,284,925
United Kingdom	791,040
Other countries	322,390
Cast-iron ware—	
Germany	1,273,595
United Kingdom	180,250
Other countries	182,310
Iron and steel ware—	
Austria-Hungary	192,610
Belgium	22,145
France	143,685
Germany	806,625
United Kingdom	752,930
Other countries	555,685
Jute, raw:	
Austria-Hungary	131,870
Germany	795,675
United Kingdom	471,225
Other countries	4,276,045
Knit goods:	
Germany	3,662,165
Other countries	285,310
Laces and embroideries:	
Germany	1,445,605
France	193,125
United Kingdom	60,770
Other countries	1,776,235
Lead:	
Belgium	73,130
France	253,895
Germany	1,959,060
Holland	245,140
United Kingdom	1,516,675
Other countries	200,850
Leather and leather belting:	
Austria-Hungary	90,125
Belgium	24,205
France	490,795
Germany	7,411,365
United Kingdom	423,845
Other countries	822,455
Musical instruments:	
Austria-Hungary	270,890
Germany	3,235,745
Other countries	119,480
Oil, vegetable, and glycerin:	
France	271,920
Germany	1,077,380
Holland	135,445
Italy	167,890
United Kingdom	550,535
Other countries	581,435
Paper, and manufactures of:	
Finland	10,482,310
Germany	2,685,210
Other countries	455,260
Pulp:	
Austria-Hungary	68,495
Finland	692,160
Germany	180,765
Rosin and pitch:	
Germany	782,800
United Kingdom	274,495
Other countries	1,862,755
Seeds, plants, and copra:	
Austria-Hungary	164,800
France	239,990
Seeds, plants, and copra—Continued.	
Germany	$4,912,070
Holland	226,085
Italy	5,000
United Kingdom	1,321,490
Other countries	4,230,885
Silk, raw:	
Austria-Hungary	81,370
France	740,570
Germany	6,357,460
Italy	472,770
Other countries	4,998,075
Silk, spun and twisted, and yarn:	
Germany	1,020,730
Other countries	233,295
Steel bars and rails:	
Austria-Hungary	87,035
Germany	209,730
United Kingdom	135,960
Tanning material:	
Austria-Hungary	43,260
Germany	1,262,780
Italy	11,000
United Kingdom	191,065
Other countries	1,509,795
Tin:	
Germany	2,039,400
United Kingdom	1,638,730
Other countries	2,167,120
Tinware:	
Austria-Hungary	207,030
Germany	2,202,655
Other countries	199,305
Tobacco:	
Germany	431,055
United Kingdom	148,835
Other countries	163,255
Wax and paraffin:	
Austria-Hungary	253,895
Germany	3,094,635
Holland	45,835
United Kingdom	211,665
Wire, and manufactures of:	
Germany	1,983,780
United Kingdom	393,460
Other countries	288,913
Wood and bark:	
Austria-Hungary	920,305
Finland	2,711,475
France	583,495
Germany	878,590
United Kingdom	64,890
Other countries	1,326,125
Wool, raw:	
Austria-Hungary	334,750
Belgium	1,267,930
France	9,664,490
Germany	9,174,210
United Kingdom	2,287,115
Other countries	831,210
Wool, combed, spun, and twisted:	
Austria-Hungary	152,440
France	609,245
Germany	3,662,165
United Kingdom	3,826,965
Woolen goods:	
Austria-Hungary	233,810
France	200,850
Germany	5,896,235
United Kingdom	1,008,370
Other countries	217,845

DECREASE IN THE EXPORT TRADE.

The progress of Russia's export trade over the European, Caucasian, and Black Sea frontiers during the past five years is indicated by the following table:

Years.	Food products.	Raw and semimanufactured products.	Animals.	Manufactured products.
1908	$269,053,000	$190,920,200	$9,732,000	$13,760,800
1909	466,358,300	214,786,900	10,235,100	12,707,600
1910	467,209,500	221,633,900	11,746,100	12,106,100
1911	509,201,600	243,884,400	13,305,600	13,325,600
1912	406,133,100	298,074,800	15,485,000	15,229,100

Increases over 1911 are shown by each group except food products, in which the falling off amounted to more than $100,000,000, chiefly on account of the smaller shipments of grain. The exports of illuminating oil decreased from 119,767,500 gallons in 1911 to 97,978,500 gallons in 1912, but showed an increase in value, owing to the great rise in price. The value of the principal items of export during the past two years is shown by the following table:

Articles.	1911	1912	Articles.	1911	1912
Alcohol and grain spirits	$3,425,265	$4,294,070	Hay and straw	$130,810	$164,285
Animals, n. e. s.	253,380	220,420	Hemp	8,183,865	8,948,125
Asbestos	775,590	914,640	Hemp tow	866,230	1,064,505
Barley	110,437,630	78,692,515	Hides:		
Beans and other pulses	5,081,505	4,219,395	Tanned	270,890	414,575
Beet roots	326,510	646,325	Untanned	14,942,210	24,609,275
Bones	130,295	161,710	Hops	585,040	771,470
Bone dust	693,705	737,995	Horns and hoofs	167,375	187,975
Books	354,835	425,905	Horses	5,788,085	6,129,015
Bran and shorts	16,211,685	18,668,750	Iron and steel:		
Bristles	3,483,460	4,890,440	Iron	1,068,110	868,290
Buckwheat:			Iron ore	2,784,605	2,115,105
Flour	2,007,470	2,153,215	Iron, cast-iron, and steel goods	769,925	1,755,120
Grits	884,255	582,980	Rails and rail fastenings	1,594,955	15,450
Butter	36,492,900	35,059,655	Slag and dross	175,615	161,710
Carpenters' and joiners' ware	1,455,390	1,230,335	Steel	20,600	11,845
Carriages on springs	116,905	187,975	Licorice root	569,590	644,780
Casings, sausage	1,393,075	1,437,880	Linseed	10,904,610	10,477,675
Caviar	1,799,925	1,306,040	Liqueurs and cordials	152,055	169,950
Caviar, red	402,730	333,720	Lycopodium	150,895	189,005
Cellulose	674,650	695,250	Machinery and parts	743,660	984,680
Cigars and cigarettes	678,770	681,860	Manganese ore	3,424,750	6,183,605
Coal and coke	380,585	873,955	Matches	155,530	130,810
Cocoons, raw silk, silk waste, etc.	2,950,435	2,502,385	Match sticks and straw	167,375	209,090
Confectionery	98,365	142,140	Meat:		
Copper	312,605	260,075	Fresh	719,455	1,910,135
Copper ware	200,850	193,125	Salted, smoked, and dried	2,322,650	2,405,565
Cordage	114,330	189,520	Mathematical instruments	167,890	206,515
Cotton goods	1,079,440	1,038,240	Mats and mat bags	143,170	121,540
Corn	29,599,110	19,467,000	Metals, n. e. s.	342,475	30,385
Cosmetics	112,270	140,080	Milk, and milk products	1,134,545	1,104,160
Down	191,065	210,120	Millet	621,090	662,505
Eggs	41,584,705	43,597,325	Molasses	231,235	211,150
Feathers	764,775	742,630	Naphtha, crude, and products	963,565	924,425
Fish	1,603,710	1,426,035	Naphtha oil:		
Flax	32,888,415	55,405,760	Illuminating	6,947,350	7,920,700
Flax tow	3,372,735	4,387,285	Lubricating	5,910,140	6,591,485
Flax and hemp goods	141,625	150,895	Light (benzine, gasoline, etc.)	1,134,030	3,367,585
Flour:			Oats	37,695,455	26,657,430
Rye	5,010,435	3,145,620	Oil cake	17,718,060	20,027,320
Wheat	4,997,045	4,018,545	Oils, vegetable	724,090	740,055
Foodstuffs, n. e. s.	1,955,970	1,164,930	Oilseeds, n. e. s.	3,884,130	5,534,190
Footwear	69,010	483,070	Ores, n. e. s.	266,770	204,455
Fruit and berries:			Peas	10,638,355	9,110,865
Fresh and pickled	672,590	803,400	Pharmaceutical goods	825,030	1,156,175
Dried	1,407,495	262,135	Pigs	3,515,390	4,355,355
Geese	3,092,060	3,873,830	Plants, medicinal and other	434,660	176,645
Glass and glassware	376,980	458,350	Platinum	7,902,160	8,270,900
Glue:			Pictures, paintings, etc.	125,660	181,795
Isinglass	109,180	80,340	Porcelain and china	464,015	625,210
Joiners'	103,000	131,325	Potash	410,970	403,760
Glycerin	490,035	361,015	Potatoes	3,126,050	2,723,835
Grain, n. e. s.	102,485	59,225	Potato flour and starch	508,305	984,165
Grits, rice and other	163,255	163,255			
Hair:					
Horse	1,425,520	2,210,895			
Other	172,525	289,430			

Articles.	1911	1912
Poultry:		
Dead	$3,518,995	$2,857,222
Live	845,115	817,820
Rosin and pitch	450,625	498,005
Rags	524,270	716,365
Rubber, and manufactures of:		
Waste	290,460	406,850
Footwear	1,376,080	1,421,915
Goods, n. e. s.	1,228,790	1,190,680
Rye	21,916,340	14,926,245
Seeds:		
Beet	4,555,175	2,412,260
Clover	2,560,580	2,982,365
Grass	3,135,835	2,953,010
Other	183,340	143,685
Skins:		
Sheep and goat	4,382,135	7,393,340
Other	3,512,815	4,191,585
Sugar:		
Granulated	24,442,930	18,474,595
Refined	410,455	263,165
Tar	417,255	403,760
Tea	175,645	105,060
Tobacco:		
Leaves	2,185,660	2,385,995
Cut and snuff	113,815	126,690
Toys, fancy goods, and office supplies	178,705	222,480
Turpentine	1,293,165	990,860
Vegetables, green and dried	$832,240	$368,225
Wearing apparel	266,255	275,525
Wheat	133,245,950	98,964,460
Wire-ribbon goods	258,015	180,765
Wood, and manufactures of:		
Beams and joists	9,171,120	10,937,055
Boards, lath, and sleepers	44,584,580	48,190,370
Girders, planks, timbers, etc	4,034,510	3,995,370
Shingles and scantlings	11,845	17,510
Stakes, poles, etc	2,923,140	108,665
Posts, pillars, etc	4,802,950	4,123,605
Firewood	723,060	586,070
For making matches and pulp	3,079,185	5,921,470
Woodwork, n. e. s.	222,995	324,965
Walnut and palm	288,915	377,495
Other	3,129,655	4,065,925
Wool, and manufactures of:		
Raw and yarn	4,101,975	5,752,550
Rugs	999,615	752,930
Other	312,090	254,925
Yarn, flax and hemp	239,475	310,545
All other articles	3,675,445	4,951,963
Total	779,717,210	734,921,995

EXPORTS BY COUNTRIES.

The chief buyers of Russia's principal exports during 1912 are shown by the following table:

Articles.	Value.
Barley:	
Austria-Hungary	$946,055
Belgium	1,043,905
France	2,082,145
Germany	47,637,500
Italy	255,440
Netherlands	14,031,175
United Kingdom	6,781,005
Other countries	5,915,290
Bran:	
Denmark	16,995
Germany	16,174,605
United Kingdom	145,230
Other countries	2,331,920
Butter:	
Denmark	5,354,970
Germany	12,264,210
United Kingdom	15,590,080
Other countries	1,850,395
Corn:	
Austria-Hungary	3,794,005
Belgium	586,585
France	881,680
Germany	3,136,865
Italy	54,590
United Kingdom	2,570,880
Other countries	8,442,395
Eggs:	
Austria-Hungary	9,353,430
Denmark	610,275
Germany	12,159,665
United Kingdom	16,862,130
Other countries	4,611,825
Flax and tow:	
Austria-Hungary	$4,265,230
Belgium	13,228,805
France	6,818,085
Germany	14,150,140
United Kingdom	19,055,515
Other countries	2,275,270
Hemp and tow:	
Austria-Hungary	933,695
Germany	4,800,315
United Kingdom	2,962,280
Other countries	1,316,340
Manganese ore:	
Germany	708,125
Netherlands	1,132,485
United Kingdom	1,745,335
Other countries	2,597,660
Manufactured goods:	
Austria-Hungary	829,665
Belgium	301,275
Denmark	196,215
France	456,805
Germany	2,674,395
Italy	6,180
Netherlands	189,005
United Kingdom	1,486,805
Other countries	9,088,720
Naphtha and products:	
Austria-Hungary	32,960
Belgium	85,490
France	2,093,990
Germany	2,814,475
Italy	319,815

Articles.	Value.
Naphtha and products—Continued.	
United Kingdom	$4,258,020
Other countries	9,199,445
Oats:	
Austria-Hungary	112,270
Belgium	2,095,535
Denmark	8,655
France	2,622,380
Germany	4,434,150
Italy	435,175
Netherlands	10,612,605
United Kingdom	4,961,510
Other countries	1,375,150
Oil cake:	
Denmark	6,857,225
Germany	7,663,200
United Kingdom	1,452,815
Other countries	4,054,080
Oilseeds:	
Belgium	978,500
France	279,130
Germany	5,556,335
Netherlands	2,151,670
United Kingdom	5,208,195
Other countries	1,838,035
Rye:	
Austria-Hungary	206,515
Rye—Continued.	
Denmark	$568,560
Germany	3,325,870
Netherlands	6,101,720
United Kingdom	1,730,400
Other countries	2,993,180
Sugar, granulated:	
Germany	956,355
United Kingdom	9,641,315
Other countries	7,876,925
Timber:	
Belgium	2,294,325
France	2,495,175
Germany	22,341,730
Netherlands	5,931,770
United Kingdom	35,075,620
Other countries	10,394,245
Wheat:	
Austria-Hungary	226,085
Belgium	1,063,990
Denmark	157,590
France	17,321,510
Germany	5,069,145
Italy	25,438,940
Netherlands	20,835,870
United Kingdom	16,554,160
Other countries	12,297,170

EXTENT OF AMERICAN TRADE.

The official returns given in the foregoing tables do not indicate the full extent of the commerce of the United States with Russia, as large quantities of American goods are transshipped at European ports or sold through agents in other European countries. When such goods enter Russia, they are credited in the official statistics to the countries from which they are last shipped, and not to the United States. While this office is unable to obtain definite statistics as to the value of America's exports to Russia, it has secured accurate data for the past two years as to the value of certain articles coming from the United States to Russia, such as cotton, agricultural machinery, leather, and the like. It is estimated conservatively that the United States sells not less than $50,000,000 a year in raw cotton, and perhaps $15,000,000 of agricultural machinery and implements.

It is safe to assert that the United States sells directly and indirectly to this country at least $80,000,000 worth of goods annually, and it is believed that this trade will come nearer approximating $90,000,000 a year. This places the United States second in the list of exporters to the Russian Empire, with Germany first and Great Britain third.

In the same way, the extent of Russia's export trade to the United States is hidden by the fact that a large proportion of that trade goes by way of other countries and appears in the Russian customs figures as destined for those countries. The great part of the export business in Russia is controlled by Germans, who have strong connections in the United States, and many of their principal shipments are sent via Hamburg and Bremen, and consequently enter American ports as German goods. This is especially true of hides, wool, and caviar.

DECLARED EXPORTS TO THE UNITED STATES.

While the Russian statistics show only some $9,000,000 worth of goods exported to the United States in 1912, the books of the various

American consulates in Russia show that merchandise to the value of more than $31,000,000 was declared at the consulates during the year, for direct exportation to the United States. The value of the principal articles so declared in European Russia and western Siberia in 1911 and 1912 is shown by the following table:

Articles.	1911	1912	Articles.	1911	1912
Alcoholic products:			Hides and skins:		
Kummel	$10,509	$15,832	Calf	$6,686,080	$11,565,811
Vodka	17,428	21,851	Cattle	3,518	11,896
Asbestos	8,960	8,110	Colt	848,775	566,519
Books	45,748	71,201	Cow	172,908	3,451,571
Bristles	22,859	48,957	Goat	897,172	1,543,296
Butter	.....	10,276	Horse	1,045,625	1,302,256
Casings	14,198	4,732	Horse fronts	36,094	.....
Church articles	8,943	12,457	Sheep	1,012,134	1,602,670
Drugs and chemicals:			Horsetails, etc	25,548	52,334
Buckthorn bark	7,812	1,355	Household goods	10,380	4,947
Cantharides	4,795	2,087	Leather	10,147	4,800
Ergot of rye	9,474	24,088	Manganese ore	197,737	521,791
Licorice root	557,294	579,479	Nuts	5,746	6,736
Lycopodium	32,903	12,395	Oils:		
Potash, carbonate of	43,754	30,992	Fusel	561,050	550,148
Fish, and products of:			Mineral	30,271	98,648
Bladders	2,976	7,180	Platinum	.....	17,163
Caviar	141,626	290,797	Raisins	30,768	21,377
Dried and salted	12,086	11,762	Rubber:		
Herring	7,471	1,894	Reclaimed	9,438	26,347
Flax and hemp products:			Sponges	8,183	8,446
Codilla	10,721	10,206	Tires	35,289	20,977
Cordage	6,419	5,103	Waste	415,320	510,846
Crash	52,999	27,397	Rugs	125,020	165,922
Flax	36,769	3,649	Seeds:		
Flax and tow	371,135	774,282	Aniseed	.....	8,011
Hemp	75,553	.....	Beet	76,750	125,898
Hemp and tow	30,246	165,870	Clover	20,549	9,113
Oakum	11,654	10,603	Hemp	.....	17,252
Rope, bolt	24,282	15,535	Lucerne	10,709	.....
Tow	8,344	.....	Millet	16,287	6,111
Furs:			Mustard	3,417	15,850
Dressed—			Vetches	10,467	31,514
Lamb	15,057	2,158	Silverware	6,005	20,150
Squirrel	12,275	.....	Tar	.....	10,386
Raw—			Tea	77,263	92,420
Badger	1,815	9,958	Tobacco:		
Ermine	14,964	5,509	Cigarettes	22,085	10,557
Fox	59,774	67,986	Unmanufactured	453	6,112
Hare	105,345	116,517	Turpentine	18,013	21,478
Lamb	181,711	555,452	Vegetables, dried:		
Lynx	9,219	2,299	Beans	7,081	59,522
Marmot	119,960	75,449	Mushrooms	63,331	53,360
Mink	1,531	8,999	Peas	126,741	52,487
Sable	4,918	30,516	Wood:		
Squirrel	6,260	891	Walnut logs	87,514	182,231
Weasel	.....	17,210	Wood pulp	311,407	200,944
Trimmings	.....	8,175	Wool, etc.:		
Glue stock	61,753	32,311	Wool	2,313,343	3,529,297
Glycerin, crude	187,965	139,850	Camel's-hair	560,973	1,018,107
Hair:			All other articles	186,859	121,127
Animal	284,103	235,404			
Human	4,318	13,830	Total	18,734,376	31,137,032

DOMESTIC TRADE.

The poor harvest of 1911 had a depressing influence on trade, which continued throughout the first half of 1912 in all of the interior markets. Purchasers were found with difficulty under even the most favorable credit terms. The fair at Kharkof early in the year, which always reflects the condition of trade in the entire southern section, was not up to the standard. Of merchandise valued at approximately $11,124,000 only about $6,798,000 worth was sold.

The satisfactory results of the Irbit fair, serving the interest of the northern section and Siberia, did not bring any marked improvement

in general commerce, as the trade there is principally in skins and furs, with a special class of purchasers headed by Russian and foreign firms. The purchases of peasant manufactures were slack.

Owing to these conditions the warehouses had large stocks of goods on hand, for which there was small demand in the Provinces. Bills of exchange were renewed and nonpayments became more frequent. The January and February meetings of the provincial traders were numerously attended, but only the strictly necessary orders were given out. In view of the large stocks on hand, manufacturers accepted orders for delivery in July and August without increasing prices. The cool, late spring and the short spring season weakened the market for summer goods and left the dealers with a surplus.

TRADE IMPROVEMENT IN LAST HALF OF YEAR.

The first prospects for favorable grass and grain crops were evident in the Provinces along the Kama River, near the Ural Mountains and western Siberia, in June, and the market grew firmer and steadier, especially for the manufacturing and leather industries. The greatest number of protested bills of exchange had come from this district in 1911, on account of the poor harvest there, and with the payment of these bills in 1912, Moscow firms were enabled to again extend credit. The absorbing capacity of the markets of that region increased, especially for cloth manufactures and haberdashery. The steppe fairs showed a strong demand for those goods, which were quickly sent in by the manufacturers. Commercial travelers found conditions favorable everywhere except in the lower basin of the Volga, where there had been repeated poor harvests.

Great animation in trade was noted at the opening of the fair at Nizhni Novgorod. Purchasers arrived early and all classes of goods were in demand, especially textiles and prepared leather and pelts. No complaints of poor business were heard during the first month of the fair, but a reaction set in in August, when it became evident that the harvest would not come up to expectations. Cotton prices sagged and the question of payments became acute, as nearly all the sales had been on credit. Leather goods and squirrel skins sold at lower prices. Toward the end of the fair conditions improved, and the general amount of business was up to the average. The bills of exchange discounted by the banks at the fair amounted to $25,469,840, as against $25,351,905 in 1911, $23,649,315 in 1910, $16,115,380 in 1909, and $14,734,665 in 1908. The autumn fairs, particularly those at Kharkof and Pokrovsk, did not prosper, owing to the unfavorable weather conditions.

FINANCIAL REVIEW FOR 1912.

THE MONEY MARKET.

The Russian money market was easy during the first part of 1912, notwithstanding the stringency abroad and the considerable extension of bourse operations. The private discount rate was 5¼ per cent. There was, however, a lack of solid bills of exchange on the market, owing to the poor harvest of 1911, the stagnation in the textile industry, and the small trade in the Provinces, with a series of failures added thereto. The rise in the discount rate of the Imperial Bank in March from 4½ to 5 per cent, resulting from the rise in foreign exchange and the necessity of preventing unfavorable arbitration, had in view only bills of exchange payable in three months, which do not predominate in Russia, and did not affect private discounts. In April and early May the rate in the open market fell to 4⅛ per cent. There was a strong demand for money on the part of the bourses, where speculation was active. Discounts were also increased, principally owing to increased building activity, the good working condition of mining concerns, and the general improvement of trade conditions.

HIGHER RATES IN SUMMER AND AUTUMN.

The favorable aspect of the harvest and the approach of the fair at Nizhni Novgorod caused a rise in the discount rate on the open market to 5 and 5¼ per cent in June and July and 5¼ and 5½ per cent in August. There was no scarcity of money at the opening of the fall "campaign," however. The indebtedness of private banks to the Imperial Bank was not large. The redemption of Treasury bonds amounting to $50,000,000 and the influx of cash from Paris for oil and mineral bonds, together with a considerable inflow of cash on accounts current in the private banks, were important factors in this connection.

The autumn passed quietly, in spite of many unfavorable circumstances. The late realization of the harvest and the bad condition of the roads prevented a normal activity in business, and the demand for cash was consequently moderate and the discount rate remained on the same level as in August. A rise in the discount rates of the Bank of England, the Bank of France, and the German Reichsbank caused exports to diminish and decreased the value of foreign currency. The Imperial Bank therefore raised its discount rate by one-half of 1 per cent, putting bills of exchange for 6 months at 5½ per cent and loans on stock security at 5½ to 6 per cent.

STRINGENCY IN THE LAST QUARTER.

In November the condition of the foreign money markets grew still more stringent. In Berlin and Vienna the rate of discount was raised to 6 per cent, and in Paris to 4 per cent, so that money was cheaper in Russia than in Germany and Austria. An abundant inflow of deposits served to diminish Russia's dependence on foreign countries.

The decreased demand for bills of lading on exports and foreign bills of exchange, which arose from the delay in the realization of the harvest on the one hand, and the increased liquidation of such bills on the other, owing to the restriction of short-term credits abroad, increased the rate of exchange. In November, checks on Berlin rose to 46.51 rubles per 100 marks, on Paris to 37.74 rubles per 100 francs, and on London to 95.25 rubles per £10. This rise, together with the general condition of the central banks of emission in Europe, forced the Imperial Bank to raise its discount rate by one-half of 1 per cent in December. On the private market the interest rate rose to 6 per cent. The market was more reserved at this time, as the sources from which the banks obtain their money had shrunk, while their enterprises remained extensive. Large sums were demanded for discount and wide credits on call and for the operation of syndicates. The market did not, however, experience the weakness felt in other countries, as the Imperial Bank had a strong gold reserve and opened credits freely to private institutions. Insolvencies increased in the Moscow textile market and in the southwest and Lodz regions. Foreign exchange showed a temporary rise in December but dropped toward the end of the month. With the approach of the New Year, the market became easier, in view of the large sums of money due on January coupons.

INDUSTRIAL FINANCE—BANK LOANS AND DEPOSITS.

One of the chief features in the activity of the Russian money market throughout 1912 was the financing of industrial enterprises. It is estimated that the banks loaned such concerns approximately $80,000,000 to $85,000,000. Stock operations during the year had an increased influence on the market.

The deposits in the joint-stock commercial banks increased from $935,394,500 on October 1, 1911, to $1,176,672,000 on the corresponding date in 1912; call loans rose from $292,468,500 to $403,811,500; stock loans from $122,776,000 to $155,118,000; and discounts from $651,835,500 to $732,433,000, in the same period. On January 1, 1912, the gold reserve of the Imperial Bank was $737,995,000, its paper currency in circulation, $683,405,000, and its unused rights of currency emission, $209,090,000. On the 1st of January, 1913, the corresponding figures were $798,250,000, $769,410,000, and $183,340,000, respectively.

INSURANCE.

The number of fires at the capitals and among the sawmills in the Archangel Government and elsewhere was considerably above the records of previous years and the Russian fire insurance companies suffered great losses during 1912. The losses in St. Petersburg and Moscow alone amounted to about $5,000,000. The joint-stock com-

panies engaged in a struggle with the Russian association of companies for mutual insurance and with the zemstvo institutions. The conventional rate was reduced in different parts of Russia in 1911, and, according to the press, in April, 1912, a further reduction of 20 per cent was made. Owing to this reduction, the rate of the joint-stock companies for some kinds of insurance dropped to 15 cents per thousand. At present there is a convention between the following companies: Salamandra, Rossia, Rossiiskoie, Moskovskoie, Iakor, Sievernoise Co., Warchavskoie, Russkoie, Rossiiskoie Second, Peterburgskoie, Rossiiskoie Transport Co., Volga, and Pomoshch. Strictly speaking, the rate convention between the joint-stock companies was organized in 1874 and went into effect in 1875, as a result of the competition which caused a serious crisis in 1870–1880.

BOURSES AND COOPERATIVE CREDIT SOCIETIES.

There are 92 bourses in Russia, 46 of which were founded during the last decade. From 1832, when the first bourse was started in St. Petersburg, until 1895, only 22 were opened, and in 1904 there were 46. In almost every new charter granted, the sphere of activity and authority of the bourses has been widened, so that the original purpose of these institutions, the management of bourse trading, has been greatly extended.

Russian bourses differ from those in other countries in that they are formed for the purpose of uniting the commercial and industrial classes for the discussion, clearing up, and defense of common needs and interests, rather than mainly to form central points for the settlement of business operations. The majority of the members of many of the Russian bourses do not take part in the operations, but become members and work as representatives of local trade and industries. For this reason their representative and executive bodies, the bourse committees, are really the representatives of Russian business circles. Separate committees deal with questions of quoting, arbitration, exports, law, different branches of trade (grain, lumber, fish, butter, etc.), and various technical subjects.

The operations of the bourses may be grouped under three main heads, as follows: (1) Dealing in local trade through special bodies; (2) representation in other institutions; (3) activity on behalf of the local commercial-industrial class.

The bourses also have various departments and institutions, such as railroad and navigation bureaus; departments for controlling the exportation of grain, with analytical bureaus; bourse banks in Libau and Riga; joint credit companies, such as those attached to the grain bourses in Omsk, St. Petersburg, and Moscow; bodies of exchange brokers; bourse notaries, etc. They take part, through their representatives, in numerous conferences, special committees, and other meetings called by the Government and by private institutions for the consideration of economic questions. They are permanently represented on the boards dealing with trade taxation, the boards of trustees of commercial schools, district committees for the regulation of the railway transportation of large quantities of goods, boards dealing with ports, the council board of trade navigation, meetings for the election of representatives of commerce and trade in the Government Council, etc.

For the benefit of local trade, the bourses found, subsidize, and provide scholarships in commercial schools; draw up trade regulations and customs; publish statistical data; maintain tugs, ice cutters, floating cranes, and dredges in harbors; found sailors' homes; organize the inspection of warehouses; build elevators, warehouses, etc.

The operations of the Russian bourses appear to benefit all industrial and commercial classes, whether the individuals aided pay the bourse membership fee or not. It is thought possible that this development will result in the formation of many chambers of commerce, with still more extensive representation of industrial organizations. A bill is now under consideration for the division of the Empire into seven or eight parts, in each of which a chamber of commerce will be organized under Government auspices to act as representative to the Government of all the business interests of that district. Each manufacturer and merchant will be required to pay a fee for the support of the organization in his district and will thereby become a member.

REVIEW OF THE STOCK MARKET IN 1912.

Until October the stock market was optimistic, but later a reaction set in. Oil, metallurgical, railroad, and bank stocks rose, as a result of activity in the respective fields, and speculators and the general public took part. The Balkan war came as a surprise to the Russian bourses and the foreign stock exchanges, and nearly precipitated a panic. There was a sharp decline in industrial stocks, but the Government security market, headed by the 4 per cent rentes, remained unshaken. Later the market grew firmer but with a steadily downward tendency, which continued to the end of the year. The prices of the most important stocks and bonds are given in the following table, in rubles (ruble=$0.515):

Issues.	Average price.		Prices in 1912.	
	1911	1912	Highest.	Lowest.
	Rubles.	*Rubles.*	*Rubles.*	*Rubles.*
4 per cent Government rentes	93.75	92.35	94.00	90.12
5 per cent interior loan, 1905	103.79	104.86	105.75	103.50
5 per cent loan, 1906	103.55	104.13	105.75	103.00
4½ per cent loan, 1909	99.46	100.12	100.75	99.38
4½ per cent stock of Petersburg Credit Co	90.48	88.88	90.25	86.33
4½ per cent mortgage bonds of Vilna Mortgage Bank	88.55	86.67	87.88	85.38
Shares:				
"Russia"	661.12	659.98	780.00	600.00
Moscow-Kazan Railroad	524.41	537.55	592.00	470.00
Kief-Voronezh Railroad	630.37	884.07	1,000.00	731.00
Rybinsk Railroad	167.88	209.01	251.00	158.00
Northern Donetz Railroad	195.97	254.43	305.50	202.50
Southeastern Railroad	241.27	268.20	297.00	230.00
Azof-Don Bank	592.51	594.07	677.00	560.00
International Bank of St. Petersburg	536.60	527.30	560.00	500.00
Vilna Land Bank	612.150	602.38	629.00	575.00
Brianski Factory	171.85	190.92	236.00	158.00
Kolomna Factory	245.63	224.96	250.00	180.00
Nikopol-Mariupol Works	193.12	269.09	336.00	184.00
Putiloff Factory	144.45	169.44	204.50	147.50
Sormovo Factory	146.65	148.45	170.00	125.00
Donetz-Yuriev Works	308.42	318.13	365.00	270.00
Baku	328.39	668.80	855.00	397.00
Russian Gold Mining	174.57	187.77	229.00	125.00
Exchange:				
London, per £10	94.54	94.89	95.25	94.60
Berlin, per 100 marks	46.23	46.32	46.51	46.19
Paris, per 100 francs	37.45	37.59	37.80	37.42

COOPERATIVE CREDIT ASSOCIATIONS.

Five years ago cooperative credit organizations were rare in Russia. At present the minor societies of this class are said to outnumber those of any other country. Up to July, 1912, there were 10,691 such societies, with 5,900,000 members, and about $234,000,000 at their disposal. More than 75 per cent of these associations were organized during the last four and a half years. Their efficiency does not, however, correspond to their growth. Their weak point is the absence of unity of action.

When cooperative organizations were in their infancy, the late Dr. Tchuprov pointed out that it was not merely different kinds of associations that were required by the organizations for credit but unions on a large scale. When crops are unsatisfactory, he wrote, the misfortune affects not persons alone but whole districts. One or the other association of agriculturists is unable to effect the return of capital in the year in question by its own means, though the capital is sure to return in the future. Therefore, he argued, minor associations should form unions on such a large scale that the results of harvest in the different districts would counterbalance each other. A single association, unsupported by a league, can fail either from overabundance or insufficiency of means.

The number of members has increased more rapidly than the means of the associations, especially in central Russia. The associations advance loans at 12 per cent per annum, and experience has shown that so long as there are no cooperative leagues and nothing to guarantee that cash will come in at the critical moment the associations will not lower the percentage either for sums deposited at mutual agreement or for loans given to different parties.

UNIONS OF CREDIT SOCIETIES NEEDED.

If there existed a union of the different associations, it is thought cash could be transferred from one place to another as required. The unions would control the management of the different associations, as the control exercised by the Government is not believed to be sufficient. There are 500 inspectors for cooperative organizations, still the inspection department can not increase as rapidly as required at the expense of the Government. The cooperative organizations must maintain inspectors at their own cost.

Another, and perhaps the most important, matter will be the organization of a general purchasing department, where the different agencies for buying agricultural machinery, seed, implements, and materials will be centered, and also a general selling department for disposing of grain, other agricultural products, and articles manufactured by the "kustari" (peasants). It has been suggested that some associations may promote such enterprises as cooperative grain elevators in addition to the system of larger elevators inaugurated by the Imperial Bank, cooperative mills, cotton-cleaning plants, etc.

Nearly all the congresses and councils of cooperative organizations, of which there were 87 in 1911–12, passed resolutions concerning the necessity for forming unions of associations.

SUCCESS OF EXISTING UNIONS.

The available data concerning these unions of cooperative societies are given in the following table:

Unions.	Founded.	Number of societies.		Balance of associations.		Deposits. 1912.
		1911	1912	1911	1912	
Berdiansk	1902	16	21	$4,600	$90,900	$32,500
Melitopol	1903	10	23	7,200	50,500	2,500
Ekaterinburg	1907	36	55	54,450	114,900	11,000
Kief	1907	20	69	6,650	498,200	388,000
Blagodarinsk	1908	16	16	21,850	21,850	.....
Kuban	[1] 1912	.....	50	.....	160,350	35,000

[1] June.

Unions were also formed in Ekaterinoslav by 27 societies, and in Zlatoust by 10 societies, in 1912. At present only 271 cooperative societies, or 3 per cent of the total number, are organized into such unions. The rapid growth of these combinations, however, prove their vitality. They have succeeded in uniting the greater part of the cooperative societies in their own district.

The business of the Moscow People's Bank, which is the central institution of the cooperative organizations, has been developing slowly, but successfully. This bank began operations with a capital of $500,000, and on December 1, 1912, its balance amounted to $1,015,000. Between April 17 and November 1 credit was granted to 469 cooperative societies, to the amount of $2,665,000. On November 18, 1912, the funds of the bank were divided as follows:

Items.	Discounts.	Accounts current.	Total.
Credit to cooperative societies	$250,000	$110,500	$360,500
Credit to cooperative associations (unions)	115,000	164,500	279,500
To zemstvo cash offices	53,500	.....	53,500
To cooperative agricultural organizations and artels	29,000	8,000	37,000
Total	447,500	283,000	730,500

GOVERNMENT AND MUNICIPAL FINANCES.

The budget of the Russian Empire for the fiscal year 1913 places the receipts of the Empire for the year at $1,674,037,888. The ordinary revenue is made up of the following items: Direct taxes, $129,197,894; indirect taxes, $345,765,438; duties, $112,453,937; royalties $495,333,284; property and funds belonging to the State, $515,769,392; expropriation of State property, $1,403,725; payments in redemption of land, $468,495; reimbursement of treasury expenses, $60,452,654; miscellaneous receipts, $7,543,068; total, $1,668,887,888. Perpetual deposits in the Imperial Bank amounting to $1,030,000 and reimbursement of loans advanced from the "general alimentation" fund of the Empire for the assistance of the peasantry totaling $4,120,000 comprise the extraordinary revenue of the year.

The ordinary expenditures total $1,551,316,106, distributed as follows: Ministry of the Imperial Household, $8,425,191; Higher Administration of the Empire, $4,539,967; Holy Synod, $22,773,176; Ministry of the Interior, $92,957,303; Ministry of Finance, $248,086,454; Ministry of Justice, $45,654,511; Ministry of Foreign Affairs, $3,723,483; Ministry of Education, $73,509,150; Ministry of Ways of Communication, $329,296,973; Ministry of Trade and Industry, $31,239,270; Chief Department of Agriculture, $69,784,037; Administration of Studs, $1,335,627; Ministry of War, $283,713,722; Ministry of Marine, $117,538,541; Audit Ministry, $6,167,429; Public Debt Services, $207,421,272; unforeseen expenditures, $5,150,000. Included among the extraordinary expenditures are $46,407,973 for the Ministry of War, $66,943,384 for railway equipment, construction, etc., and $9,270,000 for the construction and improvement of ports.

The Russian Government itself is extensively interested in the industrial activities of the Empire. Through the Imperial Bank it controls the financial situation in the country; it owns and operates the major part of its railway and telegraph systems; has practically one-third of the land and two-thirds of the forests under its immediate control; owns and operates many valuable mines; and operates many manufacturing plants.

INDEBTEDNESS OF RUSSIAN CITIES.

On the 1st of January, 1912, the indebtedness of Russian cities aggregated $195,250,000, and during that year five new loans to the amount of $20,567,182 were authorized, as compared with $12,400,000 for 13 new loans in 1911. The greater part of the total for 1912 was made up by a 4½ per cent loan of $18,000,000 issued by the city of Moscow for the extension of waterworks, development of canalization, reconstruction of the horse tramway into an electric line, construction of a wholesale meat market, and other municipal improvements. The period of amortization of this loan is 49 years.

The city of Tula put out a 5 per cent 49½-year loan of $567,150 to cover the cost of municipal improvements, and Riazan issued bonds to the amount of $608,000 at 5 per cent, running 63 years, for the construction of waterworks and an electric-light plant. Other loans confirmed during 1912 by Russian municipalities were: Reval, $750,000 at 4½ per cent, for 39 years, to cover the construction of waterworks and canals, a central electric station, military barracks, hospital, town hall and commercial stores, and street paving. Kazan, $772,500 at 5 per cent, for 49 years, to cover the cost of constructing new military barracks. Vilna, $2,186,000 at 5 per cent, for 62 years, for the construction of waterworks and canals. Narva, $322,325 at 5 per cent, for 42 years, for the amortization of previous loans; payment of the city's liabilities to the Crown and other institutions, construction of a new building for the city abattoir, and of a new building at the watering place of Oust-Narova; purchase and reconstruction of a house into commercial stores; paving of streets and extension of waterworks; and the foundation of old-age pension funds for city employees. Nikolaief, $3,347,000 at 5 per cent, for 48½ years, to cover the city's liabilities in regard to the maintenance of the Government exchequer and the police; for the construction of an elec-

tric tramway and the purchase of the Belgian Tramway Co.; canalization; the mechanical equipment of the commercial port; the construction of a new abattoir, market halls, commercial stores, and school buildings; the extension of the electric station; development of the city pawnshop, etc. Poltava, $659,200 at 5 per cent, for 36 years, for canalization and waterworks extension. Kharkof, $31,193,000 at 5 per cent, for 42 years, for the construction of tramways; extension of the electric station and waterworks; canalization; construction of a market hall; and amortization of debts to the Crown.

TRANSPORTATION AND COMMUNICATION.

Russia's vast territorial extent and the bulky character of the products entering into its commerce, both foreign and domestic, has made the question of transportation vital. The marshy character of a large part of European Russia, with the lack of available road materials and the sparsely settled condition of much of the country, have made the construction of good roads difficult, and there are something less than 500,000 miles of roadways in the entire Empire. Of the existing roads, more than 300,000 miles are in European Russia proper, and more than 45,000 miles in Russian Poland. During the winter sledges are used throughout the greater part of the country, and transportation is then easier than over the roads during the open season.

INLAND WATERWAYS.

Its water transportation facilities have played an important part in the economic development of the country, and although the expenditure on river and canal improvements in Russia between 1860 and 1910 amounted to only about $40,000,000, as compared with more than $3,000,000,000 expended on railways, the growth of the water-borne traffic has been nearly as great as that of the railway traffic. About one-third of the Empire's total freight is transported by water, and this proportion has shown little variation during the last 30 years. The chief articles of freight shipped by the water routes are timber (which makes up 52 per cent of the water-borne freight), grain, naphtha and its products, salt, and coal.

The European part of the Empire is well provided with rivers of considerable size, affording shipping routes from the interior of the country to the Caspian, Black, Baltic, White, and North Seas, while in Siberia several great rivers rise near the southern boundary and empty into the Arctic Ocean, and the Amur system spreads itself across the southeastern part and flows into the Sea of Okhotsk at Nikolaiefsk.

The total length of the rivers, lakes, and canals of the Russian Empire is 239,161 miles, of which about 178,580 miles are navigable; 66 per cent of the total navigable length is suitable only for rafts and about 32 per cent for steamers. In northern Russia navigation is open from May to October; in Central Russia, from April to November; in southern Russia, from March to November. In Siberia, the rivers are navigable in their southern courses from May to October, in their middle courses from May to September, and in all northern parts from June to August.

THE VOLGA RIVER SYSTEM.

The basin of the Volga River contains the greatest network of waterways in the Empire, the 19,060 miles of navigable streams in

that system being nearly 40 per cent of the country's total. The lack of an outlet from the Caspian Sea, into which the Volga empties, however, necessitates the transferral of a large part of the freight sent down this river to the railway at Tsaritsin, and then to vessels on the River Don, which empties into the Sea of Azof, an arm of the Black Sea. The two rivers are less than 50 miles apart at Tsaritsin, and projects to connect them by a canal date back to at least the sixteenth century. The work has never been actually undertaken, however.

In the spring of 1912 a company applied for a concession to connect the two rivers, its project calling for the construction of a canal at a cost of $43,000,000 and the dredging of the Don to make it navigable for ships of the Volga type, at a cost of about $10,000,000. The completion of such a canal would permit the bulk of the grain from the Volga basin to go out by way of the Black Sea, with an all-water route, instead of being shipped by way of the Baltic, as at present. Timber could be transported from the Kama district, sugar from the southwest, and naphtha from the Caspian and Volga regions. Cotton from Transcaucasia and great supplies of grain and other products from Siberia could be shipped by way of the canal.

OTHER GREAT RIVERS.

The Don River system has 2,508 miles of navigable waterway, while the Dnieper, Dniester, and Southern Bug Rivers, which enter the Black Sea at Kherson, Odessa, and Nicolaief, respectively, have with their branches, navigable lengths of 6,300 miles, 534 miles, and 90 miles, respectively. The Vistula River system flows through Poland and then through northern Germany to the Baltic, with a navigable length of 2,016 miles. To the north of this system is that of the Nieman, with a navigable length of 2,013 miles, also passing through Germany to the Baltic. The western Dvina system is navigable for 2,700 miles, and empties into the Baltic at Riga. In conjunction with chains of lakes, the Narova and the Neva systems have respectively 1,140 miles and 4,398 miles of navigable waterways, both flowing into the Gulf of Finland. The northern Dvina is the principal river system of northern Russia, entering the Archangel Gulf on the White Sea, at the town of Archangel. With its branches, this river is navigable for 3,954 miles.

In Siberia the Ob River system stretches from south of the Chinese boundary to the Gulf of Ob, on the Artic Ocean, with a total navigable length of 16,869 miles. To the east of the Ob the Yenisei River system also crosses the country from south to north, being navigable for 11,808 miles, including Lake Baikal. The Lena River also gives a large part of Siberia water connection with the Arctic Ocean, being navigable for 6,864 miles, while smaller rivers pouring into the same ocean have a combined length of navigable channels of 5,443 miles.

The Amur River, which serves for a large part of its course as the boundary between Siberia and Manchuria, is the only large system flowing through Siberia to the east. It is navigable for 8,541 miles

and taps the section crossed by the eastern part of the Trans-Siberian Railway.

In Central Asia the Amu Daria, with a navigable length of 927 miles, flows from the northern boundary of Afghanistan into the Aral Sea, while the Syr Daria, entering the northern part of the same sea, is navigable for 774 miles.

RUSSIA'S CANAL SYSTEM.

The canal system of Russia was largely constructed during the first half of the nineteenth century, and has been developed in eight connecting links. By these canals and canalized rivers the Caspian, Baltic, and White Seas and the Baltic and Black Seas are connected. The Volga is joined to the Neva by three canals, giving through water connection from St. Petersburg to the Caspian Sea, and with the northern Dvina by the Duke Alexander of Wurttemberg Canal, which unites the White and Caspian Seas. The Dnieper is connected by canals with the western Dvina, the Niemen, and the Vistula (via the Bug) Rivers, emptying into the Baltic, which connect that sea by water with the Black Sea. Finally, the Vistula is linked with the Niemen River by the Augusta Canal, 61 miles in length. The Ob-Yenisei waterway in Siberia runs from Irbit, on the Nitsa River, close to the frontier of European Russia, to Kiakhta, on the Selungua River, on the Chinese frontier, a distance of nearly 3,650 miles.

The total length of artificial waterways is 1,225 miles, of which 1,061 miles are included in the following systems: Mariinsky, 438; Tihvinsky, 120; Vyshny Volotchok, 89; Duke of Wurttemberg, 40; Dnieper-Bug, 132; Oginsky, 110; Beresina, 68; Vistula-Niemen, 64. Of these artificial waterways 505 miles represent canals and 556 miles natural watercourses made navigable by sluices, etc.

On account of the varying conditions of navigation on the rivers of Russia the waterways of the Empire are classified in four categories. The first group comprises the lesser tributaries and the upper reaches of nearly all of the main rivers, which are available for floating logs either singly or in rafts, and only during the period of high water in the spring. In European Russia there are 15,826 miles of waterway, including the canal connecting the Dnieper and the western Dvina Rivers, which fall within this class, and 22,948 miles in Asiatic Russia.

The second group is made up of the rivers and canals capable of carrying loaded vessels with the current and navigable only in the spring. The Vyshny Volotchok Canal, one of the three connecting the Volga and the Neva Rivers, belongs to this class. The third group includes all the waterways that take small vessels during the season of open navigation, but are not able to accommodate steam vessels. The canals belonging in this class are the Duke Alexander of Wurttemburg, the Auguste, the canals connecting the Dnieper River with the Nieman and Vistula Rivers; the Tihvinsky Canal, which is one of the three between the Volga and the Neva systems, and the locked rivers of Moscow and Tega. The fourth group includes all the waterways and lakes navigable by steamships or other vessels.

RIVER FLEET.

According to information collected by the Ministry of Ways of Communication, the river fleet of European Russia shows the following figures:

Years.	Steamers.			Other vessels.		
	Number.	Horse-power of engines.	Value.	Number.	Capacity.	Value.
					Tons.	
1884	1,246	72,105	$24,450,000	20,095	5,841,935	$16,050,000
1890	1,829	103,206	37,800,000	20,125	6,470,000	19,150,000
1895	2,539	129,759	48,950,000	20,580	8,490,000	23,000,000
1900	3,294	165,004	66,650,000	22,859	10,870,000	30,300,000
1905	3,895	192,284	76,600,000	23,175	12,540,000	35,750,000

It may be safely assumed that the river fleet now numbers more than 4,000 steamers and not less than 23,500 barges, etc.

In regard to Asiatic Russia, the river fleet on the Ob, Yenisei, Lena, and Amur consisted in 1906 of 414 steamers and 825 other boats, with a total capacity of 419,354 tons. Navigation is greatest on the Ob (136 steamers and other vessels) and Amur (116 steamers and 247 other craft).

WATERWAY ADMINISTRATION.

The sums appropriated for the development and improvement of Russian waterways have shown a constant increase during recent years, as will be seen from the following table:

Years.	Total sum appropriated.	Included for new constructions.
1901–1905, average	$7,324,500	$6,094,000
1906–1910, average	8,480,500	7,133,000
1911	10,308,000	9,488,500
1912	12,104,000	11,247,500

IMPROVEMENT PROJECTS—LAWS—SHIP TAX.

Among the projects partly planned and executed the most important are: Systematic investigation and description of the waterways; investigation of the Don, to ascertain how far the conditions of navigation on this river could be improved (the development of navigation on the Don will naturally end in a connection with the Volga water system by a canal); improvement of the canal system connecting the Dnieper and the western Dvina; construction of a canal to connect the towns of Pskov and Juryev with the sea, and exploitation of the watercourse for industrial purposes; investigation in regard to the connection by a canal of the Ukhta naphtha region with the Rivers Dvina and Kama, and the Rivers Ob and Petchora with each other; the establishment of an uninterrupted waterway

Kama–Irtysh; improvement of the conditions of navigation of the River Dnieper; investigation of the Siberian rivers and those of the Far East.

The Ministry of Ways of Communication has also issued regulations concerning the technical and sanitary conditions of navigation, the promotion of river navigation, etc. Of further importance is the working out of a law which is to regulate the conditions of transportation of freight on the rivers, i. e., the mutual relations of the forwarders and transporters, the establishment of terms of delivery, the storage of freight, etc.

As a refundment for the expenses on hydrotechnical improvements the Government exacts a special tax from shipowners, which during recent years amounted to the following sums: In 1904, $134,400; 1905, $151,500; 1906, $155,450; 1907, $147,200; 1908, $132,950; 1909, $169,727.

DEEP-SEA SHIPPING.

Russia's merchant marine on January 1, 1911, consisted of 943 steam vessels, of a net registered tonnage of 463,446, and 2,504 sailing vessels, of 260,116 tons. Of the steam vessels, 403 with a total tonnage of 200,393 were on the Black and Azov Seas; 250 with a registered tonnage of 119,254 were on the Caspian; 207 with a registered tonnage of 102,964 were on the Baltic; 58 of 12,938 tons were on the White Sea; and 25 with a tonnage of 27,897 were on the Pacific Ocean. The sailing fleet was divided as follows: On the Baltic, 775 ships of 78,613 registered tons; Black and Azov Seas, 786 of 43,888 registered tons; Caspian, 566 of 114,118 registered tons; White, 410 of 23,397 registered tons; Pacific Ocean, 2 of 100 registered tons.

The large number of vessels on the Caspian Sea is accounted for by the oil-carrying trade there.

RAILWAY SYSTEMS.

The growth of Russia's railway system dates practically from the decade 1867–1877, at the close of which the mileage in the Empire amounted to 13,023. On the first of January, 1912, the total opened to permanent traffic was 46,221 miles, of which 28,744 belonged to the Russian Government lines, 14,079 to private lines in Russia, 2,140 to the Finnish Government lines, 179 to private lines in Finland, and 1,079 to the Chinese Eastern Railway. In actual mileage, Russia ranks next to the United States, but its mileage in proportion to its population and area is small. The needs of the more densely settled southern and western parts of European Russia have been so great that only a few trunk lines have been extended into the newer sections, to aid in their exploitation, and these lines have so few branches or "feeders" that a large part of the Empire is left without railway facilities. Most of the important lines are in the hands of the Government, which has a definite program for the extension of existing lines and the construction of new ones to satisfy the demands of the many regions now in great need of railways, and to prevent

the useless construction of lines in regions where they are not required.

The principal railway systems of Russia, with their mileage in operation or under construction in 1911, are as follows, the lines all belonging to the State unless otherwise specified:

Ekaterininsk Railway.—A network in the Ekaterinoslav district, furnishing connections with the ports of Berdiansk, Mariupol, Taganrog, and Rostoff-on-Don; joins the Southern, Southeastern, and Vladikavkaz Railways; 1,868 miles, 5-foot gauge.

Finland Government Railways.—Connect the ports of Finland from Cronstadt to the Swedish border, with lines into the interior; connect with the Russian State Railways: 2,140 miles, 5-foot gauge.

Libau-Romny Railway.—Libau to Romny, using the Northwestern Railway from Koshedari to Vileika; branch from Radzivitishki to Dvinsk; 843 miles, 5-foot gauge.

Middle Asia Railway.—Krasnovodsk, on the Caspian Sea, via Merv and Bokhara to Andijan, in Turkestan; branch from Merv to Kushk, on the Afghanistan boundary; 1,587 miles, 5-foot gauge.

Moscow-Brest Litovsk Railway.—Moscow to Brest Litovsk, via Viazma, Smolensk, Minsk, and Baranovitchi; 680 miles, 5-foot gauge.

Moscow-Kazan Railway (private).—Moscow, via Riazan and Saransk, to Nizhni Novgorod, Kazan, Simbirsk, and Syzran; 1,645 miles, 5-foot gauge.

Moscow-Kief-Voronezh Railway (private).—Moscow to Kief, via Kaluga, Suchinitchi, and Briansk; Kief to Poltava; Kief and Briansk to Voronezh, via Kursk; branch to Odessa; 1,928 miles, 5-foot and 3.28-foot gauge.

Moscow-Kursk Railway.—Moscow to Kursk, via Tula and Orel; Moscow to Nizhni Novgorod and Murom; 757 miles, 5-foot gauge.

Moscow-Windau-Rybinsk Railway (private).—Windau to Moscow, via Mitau, Kreuzburg, and Reshitza; Pskov to Rybinsk, via Bologoye; St. Petersburg to Vitebsk, crossing the other two lines; 1,535 miles, 5-foot and 3.5-foot gauge.

Nicolai Railway.—St. Petersburg to Moscow; Bologoye to Grodno; Lihislavl to Viazma; 1,299 miles, 5-foot gauge.

North Donetz Railway (private).—Lgov, on the Moscow-Kief-Voronezh Railway, to Rodokovo, on the Southern Railway, 400 miles, 5-foot gauge.

Northern Railway.—St. Petersburg to Viatka, via Vologda, connecting with the Perm line at Viatka; Archangel to Moscow, via Vologda and Yaroslav, with branches to Kostroma and Rybinsk; 1,986 miles, 5 foot and 3.5-foot gauge.

Northwest Railway.—St. Petersburg to Reval, Baltic Port, and Riga; St. Petersburg to Warsaw, via Pskov, Dvinsk, Vilna, and Bielostok; Vilna to German border, connecting with German lines; 1,688 miles, 5-foot gauge.

Perm Railway.—Kotlass, via Viatka, Perm, and Ekaterinburg, to Tcheliabinsk and Tiumen; branch to Deduchin; 1,460 miles, 5-foot gauge.

Polish Railway.—Briansk to Brest Litovsk, Sarny, Bielostok, and Vilna, via Gomel and Baranovitchi; 946 miles, 5-foot gauge.

Riazan-Ural Railway (private).—Smolensk, Moscow, and Riazan to Volsk, Kamishin, and Astrakhan, via Tambov and Saratoff; 2,363 miles, 5-foot gauge; 367 miles, 3.28-foot gauge.

Riga-Orel Railway.—Riga to Orel, via Kreutzburg, Dvinsk, Vitebsk, Smolensk, and Briansk; Riga to Moscheikio, via Mitau; Vitebsk to Zhlobin, via Mohileff; 970 miles, 5-foot gauge.

Samara-Zlatoust Railway.—Syzran to Tcheliabinsk, via Samara; 793 miles, 5-foot gauge; 54 miles, 3.28-foot gauge.

Southeastern Railway (private).—Kozlof, Orel, and Kharkoff to Tsaritsin and Rostoff-on-Don; 2,156 miles, 5-foot gauge.

Southern Railway.—Kursk to Sebastopol and Kerch, via Kharkoff; Kharkoff to Belopolie, Romny, and Elizavetgrad; connects with the Moscow-Kief-Voronezh, Libau-Romny, Southwestern, Ekaterinoslav, and Southeastern lines; 2,038 miles, 5-foot gauge.

Southwestern Railway.—Kovel to Kief, Odessa, Elizavetgrad, and points on the Austro-Hungarian and Roumanian borders; connects with the Vistula, Polish, Moscow-Kief-Voronezh, and Southern Railways; 2,590 miles, 5-foot gauge.

Syzran-Viazma Railway.—Viazma to Syzran, via Tula and Penza; branch to Yenetz; 854 miles, 5-foot gauge.

Tashkent Railway.—Samara, via Orenburg, to Tashkent, meeting the Middle Asia line; 1,385 miles, 5-foot gauge.

Transcaucasian Railway.—Poti and Batum, via Kutais and Tiflis, to Baku, meeting the Vladikavkaz line; connects by steamer with the Middle Asia line at Krasnovodsk; Tiflis to the Persian border; 1,170 miles, 5-foot gauge.

Transsiberian Railway.—Tcheliabinsk, via Irkutsk, Karimskaya, and Khabarofsk, to Vladivostok; at present completed from Tcheliabinsk to beyond Srietensk, and from Khabarofsk to Nikolsk Ussurisk and Vladivostok. A branch runs from Karimskaya to Manchouli, on the Manchurian frontier, and thence as the Chinese Eastern Railway via Harbin to Vladivostok. The South Manchuria Railway connects Harbin and Port Arthur.

Vistula Railway.—A network in Russian Poland, centering at Warsaw, and connecting with the Northwestern, Polish, Nicolai, Moscow-Brest Litovsk, Southwestern, and Vistula Railways, and at the border with German and Austro-Hungarian railways; 1,519 miles, 5-foot gauge.

Vladikavkaz Railway (private) —Tsaritsin, Rostoff-on-Don, and Novorossisk, via Petrovsk, to Baku; 1,575 miles, 5-foot gauge.

Warsaw-Vienna Railway (private).—Warsaw, south and west to the border, connecting with German and Austro-Hungarian lines; 306 miles, 4.7-foot gauge; 160 miles, 5-foot gauge.

INCOME OF THE PRIVATE RAILWAYS.

The principal private railways of Russia are in the hands of seven companies, the Moscow-Windau-Rybinsk, the Moskow-Kief-Voronezh, the Southeastern, the Vladikavkaz, the Moscow-Kazan, the Riazan-Ural, and the North Donetz. The income of these railways rose from $100,600,000 in 1907 to $133,500,000 in 1911, a gain of 32.7 per cent in five years, while the expenses decreased from $76,000,000 to $75,300,000 in the same period.

The unsatisfactory results of the harvest in 1911 had somewhat of an adverse influence on the income of the private railways during the first 7 or 8 months of 1912, but the 1912 harvest, which was on the whole satisfactory, caused a considerable increase of business in the autumn. In November large amounts of grain were brought to the railway stations, and the earnings of the different lines in that month showed increases over the corresponding month of 1911 ranging from $19,000 on the Moscow-Kief-Voronezh line to $500,000 on the Moscow-Kazan Railway. The gross income of the principal private railways of Russia for the first 11 months of 1912, compared with the corresponding period of 1911, was as follows:

Railways.	1911	1912
Southeastern	$25,724,000	$26,000,000
Moscow-Kief-Voronezh	18,260,000	20,000,000
Moscow-[illegible]indau-Rybinsk	11,150,000	12,000,000
Moscow-Kazan	12,886,500	13,000,000
Vladikavkaz (10 months)	23,335,000	23,500,000

BUDGETS OF THE PRIVATE LINES.

The estimated budgets of these railways for 1913, as confirmed by the meetings of the stockholders, are considerably higher than those of 1912, with the exception of the Riazan-Ural Railway. A higher income is expected from passenger traffic as well as from the movement of the larger crops of 1912, and while fuel has risen in price, the

"coefficient of exploitation" (the ratio of expenses to income) is lower. This coefficient of exploitation has been gradually reduced since 1908, indicating great improvement in the method of conducting the railways. This reduction is shown by the following schedule:

Railways.	1908	1909	1910	1911	1912	1913
	Perct.	*Perct.*	*Perct.*	*Perct.*	*Perct.*	*Perct.*
Moscow-Windau-Rybinsk	61.9	55.3	52.4	50.6	54.2	50.4
Moscow-Kief-Voronezh	67.6	65.0	56.3	53.9	.....	58.0
Southeastern	69.6	61.1	55.4	55.0	60.1	58.0
Vladikavkaz	60.2	56.6	52.6	52.5	55.4	54.7
Moscow-Kazan	73.7	64.0	58.7	57.0	59.8	63.7
Riazan-Ural	90.8	78.7	72.1	71.6	71.1	73.5
North Donetz	.....	.....	.....	.....	.....	42.8

The following table shows approximately the budgets of these railways for 1912 and 1913:

Railways.	Gross income.		Cost of exploitation.		Net profit.	
	1912	1913	1912	1913	1912	1913
Moscow-Windau-Rybinsk	$13,450,000	$15,050,000	$7,300,000	$7,600,000	$6,150,000	$7,450,000
Moscow-Kief-Voronezh	.....	20,000,000	.....	11,600,000	.....	8,400,000
Southeastern	24,500,000	25,000,000	14,750,000	14,500,000	9,750,000	10,500,000
Vladikavkaz	23,400,000	24,900,000	12,850,000	13,600,000	10,550,000	11,300,000
Moscow-Kazan	15,900,000	17,500,000	11,100,000	11,150,000	4,800,000	6,350,000
Riazan-Ural	22,050,000	22,150,000	15,700,000	16,300,000	6,350,000	5,850,000
North Donetz	6,550,000	7,000,000	.....	3,000,000	.....	4,000,000

The net profit on the Riazan-Ural Railway during 1913 is estimated at a lower figure than in 1912, on account of unsatisfactory crops in part of the region which it serves.

TRAFFIC ON RUSSIAN RAILWAYS.

An idea of the extent of the freight service on the railways of Russia is given by the preliminary statement for 1912 issued by the Ministry of Ways of Communications. According to this report, the number of cars which carried freight on the railways of the Empire was 9,047,318 in 1910, 9,859,634 in 1911, and 10,277,064 in 1912. Of these 1,338,995 were loaded with grain in 1910, 1,360,967 in 1911, and 1,241,371 in 1912. The decrease in the amount of grain transported during 1912, as compared with 1910 and 1911, notwithstanding the good harvest, is explained principally by the fact that a considerable portion of the grain sent out during the calendar year belongs to the crop of the preceding year. The railways carried 28,080,000 short tons of mineral products from the Don Basin in 1912, as compared with 25,110,000 tons in 1911, and 21,312,000 tons in 1910, while the butter shipments from Siberia amounted to 80,426 short tons, as against 77,582 tons in 1911 and 69,992 tons in 1910. The railways carried 231,982,756 passengers during 1912, as compared to 209,272,971 in 1911 and 188,849,081 in 1910.

DEPOT AND EXPRESS FACILITIES.

COLD STORAGE AND REFRIGERATOR CARS.

An important factor in the development of railways in Russia in the future will be the extension of the system of refrigerator stores and cooling cars. Interest in the provision of refrigeration facilities for the transportation of perishable products has been widely developed, and the work of providing a system of refrigerator cars and cold-storage stations has been entrusted to a special committee under the Ministry of Ways and Communications. There are now two complete chains of icing plants along the railways running from Tcheliabinsk to the chief export points, with large cold-storage plants in Riga, St. Petersburg, Windau, and Libau, and similar equipment is to be provided along the railways from Turkestan to Moscow and St. Petersburg. It is proposed to construct storage plants at Samarkand, Tashkend, Aralskoye, Orenburg, Samara, Moscow, and St. Petersburg, and to permit the private construction of such stores at Bugun, Kara-Tchokat, and Amu-Daria. Icing stations will be constructed at intervals of 165 miles. At the start, it is expected that 480 refrigerator cars will be provided, each with a capacity of 30,600 pounds of meat or 39,600 pounds of fish or fruit. An application for a credit of $3,250,000 to put this plan in effect was presented for legislative consideration in March, 1913.

GRAIN ELEVATORS—PARCELS SERVICE.

The attention of the Russian Government was directed to the need for grain elevators some three years ago by a group of Americans who endeavored to obtain concessions for their construction. There are now large grain elevators in Yeletz, St. Petersburg, Nieuport, Reval, Riga, Windau, Odessa, Nicolaieff, and Novorossisk, and late in 1912 the first of a proposed chain of elevators was constructed at Griazy at a cost of $500,000. The latter plan calls for the construction of elevators in Samara and Voronezh Governments with a total capacity of 185,400 tons, divided as follows:

Samara Government.—City of Samara, 54,000 tons; Abdulin, 12,600 tons; Bogoroslan, 10,800 tons; Tolkai, 5,400 tons; Sorotchinsk, 12,600 tons; Buzuluk, 14,400 tons; Neprika, 5,400 tons; Bogati, 5,400 tons.

Voronezh Government.—Griazy, 27,000 tons; Valouiki, 9,000 tons; Lisski, 9,000 tons; Jalova, 9,000 tons; Millerovo, 10,800 tons.

The elevator at Griazy was built according to the American "Empire" system, with the central building and some of the bins constructed of ferroconcrete and the rest of the bins of wood. It is expected that in 1916 a group of 84 elevators will have been built in southeastern Russia, and the system will also be extended throughout the Empire as rapidly as possible.

The Nicolai Railway has introduced a new parcels service on its line from St. Petersburg to Moscow. Small parcels, lightly but securely packed, are received and delivered by the St. Petersburg Railway Artel at St. Petersburg, Vyshny Volotchok, Tver, and Moscow, and the service will be extended as experience is gained and business requires. The cost of transportation is the same as the existing charge for personal baggage, 18 cents for 9 pounds carried 400 miles.

Delivery to the addressee costs 10 to 28 cents per parcel, according to the distance from the station.

POSTAL SERVICE, TELEGRAPHS, AND TELEPHONES.

Russia's postal service is not so extensive as that of most other civilized countries, having but one post office for each 10,000 inhabitants. In 1910, there were 15,701 post offices in Russia and 2,138 in Finland, and the postal routes of the Empire covered 209,891 miles. At the end of 1909 there were 4,640 postal-savings banks in Russia, which received deposits amounting to $84,180,715 and paid $49,785,355 to depositors.

Russia is a member of the International Postal Union and postal communications between that country and the United States are subject to the Postal Union rates. There is no parcel post between the two countries, and postal parcels, if sent from the United States have to be directed to some correspondent or agent in a country having a parcel-post convention with Russia, to be forwarded from there. Parcels sent by post to Germany and thence by express to Russia must not exceed 11 pounds in weight or 160 cubic inches in bulk. International reply coupons are not accepted by Russian post offices.

Remittances by postal money orders may be made from the United States to Russia in amounts of not more than $100 on a single order, the charge ranging from 10 cents for amounts up to $2.50, to $1 for amounts from $90.01 to $100. Money orders payable in the United States are also obtainable in Russia. In computing the value of such money orders, the Russian ruble is given a fixed value of $0.5146 in each country, and the value of the order does not fluctuate with changes in exchange.

Within the Empire, Russia has a parcel-post system, and also a system for the transmission of registered parcels. C. o. d. parcels received from abroad are transmitted to the customhouse, where the addressees receive and pay for them, on notification from the post office. C. o. d. parcels having a value of not more than $2,575 may be sent between stations in Russia.

TELEGRAPHS AND TELEPHONES.

In 1909 there were 108,880 miles of Government telegraph lines in Russia, with 292,994 miles of wire. The telegrams transmitted during that year numbered 33,516,000, or 11 per cent more than in 1908. Of this number, 28,523,000 were inland messages, and 4,993,000 were exchanged with foreign countries. The average length of each telegram was 13.81 words.

The Government maintained 99 telephone lines in 1909, with 42,206 instruments, 41,957 subscribers, and 248 stations, covering an area of 6,280 square miles. The lines extended 5,137 miles, with 57,068 miles of wire. The gross expense of these lines during that year was $623,218, and the gross profit $1,499,147. The most important intercity line is that from Moscow to St. Petersburg, which is 415.3 miles in length.

Of the private and municipal telephone companies, the most important operate in the cities of Baku, Warsaw, Windau, Moscow, Melito-

pol, Mitau, Nizhni Novgorod, Odessa, Riga, Rostoff, Sestroretsh, St. Petersburg, Tiraspol, and Terrijikki. These companies in 1909 had 89,508 instruments installed, 88,687 subscribers, 126 stations, 1,741 miles of line, and 180,792 miles of wire. Their gross expense amounted to $1,449,594, and their gross profit to $2,919,587. These lines covered an area of 1,094.5 square miles, with a population of 6,000,000.

In addition to these lines there were 529 local lines in towns, 133 Government and district lines maintained by zemstvos, and 28 lines connecting different towns. They represented 26,758 miles of lines, 50,040 miles of wire, 10,729 stations, 31,064 instruments, covered an area of 455,462 square miles, with a population of 11,270,288, and showed gross expenses of $625,761 and gross profits aggregating $569,757.

ZEMSTVO TELEPHONE SYSTEMS.

The Russian zemstvo telephone system was first established in the Lebedinski district of Kharkof Province. The opening of this line on August 18, 1899, marked a new era in telephone construction throughout the rural sections.

Later on a telephone system was established in the Lokhvitzki district of Poltava Government. This was opened in 1901. The Samara district zemstvo established telephonic connections the same year between the zemstvo board and seven of the principal sections of the county. In 1902 a telephone line was opened in the Bakhmut district of Ekaterinoslav Government; this proved to be the largest of the district systems, comprising about 100 apparatus and extending about 310 miles. In the same year a line was opened by the zemstvo of the Sudshan district, Kursk Government.

All these telephone systems were established and managed on the principle of so-called private telephones, i. e., those intended for the sole use of the persons or institutions owning them. Others were not allowed to use them. Naturally such a restriction was most inconvenient, especially in an industrial center like Bakhmut. Therefore the Bakhmut zemstvo petitioned in 1902 that it might exploit its lines on the same basis as those intended for public use, i. e., that anyone might use the telephone by subscribing to the same, or for a certain sum paid for every communication over the telephone.

FIRST SYSTEMS COVERING A WHOLE PROVINCE.

Owing to this petition new rules concerning the zemstvo telephones were issued on February 15, 1903, which gave them a wider scope for action. These rules instituted an entirely new system, run by the zemstvo and adapted for the use of the whole district. The right to establish and exploit such lines was vested in the zemstvos, and from that moment the zemstvo telephone began to flourish.

During the seven years 1902–1909 about 70 district telephone systems were arranged by the zemstvos. It was mainly the district zemstvo which established and exploited these lines. Provincial zemstvo boards merely expressed approval of the action of the district zemstvos, and in some cases made short-term loans for the construction of the lines. The Kazan zemstvo was the first one which took upon itself the business of establishing a telephone system for a

whole Province. This system was over 867 miles in length and possessed 1,867 miles of wire and more than 30 intermediate stations. It is the largest zemstvo telephone system in the Empire, not only being complementary to the Imperial Government post and telegraph service in the Province, but even competing with the latter. The management has assumed a distinctly commercial character.

In 1906 a telephone system was arranged on the same principles in the Province of Mohilev and in 1909 in the Province of Poltava.

AN IMPERIAL CONCESSION NOW NECESSARY.

In order to establish connection between their own telephones and those of the Imperial Government, the zemstvos were compelled to construct lines of considerable length and cost. To cover the expenses incurred by exploiting these lines on a special basis, some of the connecting lines between the zemstvo and the Imperial Government systems are used expressly for communication between different cities. Such lines, connecting the chief commercial and industrial centers and open for the use of the general public at special rates, have the distinct character of telephone lines managed by private persons on a commercial basis.

In 1909 the Chief Department of Posts and Telegraphs began to consider the zemstvo telephones as commercial enterprises and granted permission for establishing such systems only for general use on the same conditions as were applied in the case of private enterprises. The zemstvo was now bound to obtain a concession for 18 years, to pay to the Imperial Government 15 per cent of the gross income, and, when the concession expired, to hand over the whole telephone system to the Imperial Government free of charge. Later on more restrictions were introduced and the Imperial Government reserved to itself the right to purchase the whole of the zemstvo telephone system seven years after it had been opened.

Exploiting telephone lines is not a profitable enterprise for the zemstvos, as the majority of institutions and persons use them free of charge for zemstvo business. The zemstvos spend considerable sums constructing and maintaining telephone systems. The business is made more profitable in those cases where it is possible to connect all the larger cities or other centers within the zemstvo telephone zone or in the neighboring district with each other and to adapt the service for the use of the public.

MILEAGE, EQUIPMENT, AND RATES.

There are 772 districts in Russia. In 120, telephone lines have been constructed by the zemstvos. There remain for construction 652 zemstvo lines.

The combined zemstvo companies possess about 7,100 apparatus, 16,000 miles of lines, 30,000 miles of wire, and several hundred central and intermediate stations. More than $1,500,000 has been spent by them for constructing telephone systems. Loans run for 10 to 30 years and were negotiated with insurance companies. The cost of constructing telephone lines with one wire varies in the different districts from $35 to $45 per mile. The average cost of 1 mile of wire is $40. A telephone apparatus costs $18 to $25, with installation.

The technical construction of the zemstvo telephones is very much the same as that of the Imperial Government lines. In cities the zemstvos mostly use bronze wire 1.2 millimeters (0.0472 inch) in diameter. For lines in the districts galvanized-steel wire 2.5 millimeters (0.0984 inch) in diameter is employed. The construction work is under the control of the zemstvos, but is sometimes sublet to private companies.

The annual subscription to a zemstvo district telephone is customarily $12.50 to $23. A few of the zemstvos charge $30 to $35. The Bakhmut zemstvo rates are $75 a year.

TRAVEL IN RUSSIA.

Any one contemplating a visit to Russia should secure a passport, as he will be unable to enter the frontier without it. He should have it viséed at any of the imperial Russian consulates in the United States or abroad. This authorizes the bearer coming across the European frontier to reside and travel for six months in any part of Russia, with the exception of such parts of the Russian possessions in Central Asia as are under military government.

Those wishing to travel or reside in Russian Central Asia are required to apply for the necessary permit through their diplomatic representative at St. Petersburg. The applicant must set out the facts in connection with his proposed journey, when and whence he expects to leave, and a description of his proposed itinerary, giving the names of the Provinces and cities through which he will pass. A foreigner coming into Asiatic Russia across the Asiatic frontier is required to have a special passport from a Russian legation or consulate.

LEGAL FORMALITIES.

The national passport is first exhibited by the traveler to the authorities at the frontier, who affix a seal bearing the name of the frontier station and the date of passing the same. Unfortunately, the trains leaving Berlin for Warsaw and other interior points arrive at the frontier at 2 o'clock in the morning, and every one is routed out of the carriages and required to bring even their handbags into the customs examination room. The examination frequently occupies two hours, but the utmost politeness is bestowed upon the travelers, and few mistakes occur. The examination is not unduly critical, a close watch being made as to firearms, alcoholic beverages, and tobacco. The trains from Berlin and Paris for St. Petersburg are more happily scheduled as to the time of arrival at the frontier and less vexation befalls one in respect to customs formalities.

Upon arrival at the first stopping place in the Empire, the passport must be exhibited for the second time at the hotel decided upon. Hotel and pension proprietors are required to register all guests, and at the same time to demand their passports for registration at the local police stations. That formality, however, is attended to by the porter for a small fee. Should the traveler desire to remain longer than six months, the passport must first be submitted to the foreign office of the governor of the respective Province, where the document is viséed, to the effect that the bearer is permitted to reside in the

Empire on the strength of his national passport for the period of six months from the date of passing the frontier. He must then apply for a Russian billet de séjour, or residential permit, good for one year, to the governor of the Province he resides in at the time. This can also be attended to by the porter or by the doorkeeper, should the applicant be living in private quarters.

REGULATIONS FOR LEAVING THE COUNTRY.

Foreigners who have resided in Russia not longer than six months may leave the Empire with their national passport after a second visé by the local authorities to see that there is no impediment to their leaving the country. The latter regulation is intended to prevent the absconding of debtors or of parties in a criminal or civil suit before a verdict of the court is obtained.

The foreigner who has remained in Russia for more than six months and who is in possession of the Russian billet de séjour good for the period of one year must first apply to the police station of the district he is living in for a permit, and then to the foreign office of the governor of the Province for a so-called "traveling passport," which is issued on account of the Russian billet de séjour and the national passport attached thereto, the former being retained and the latter delivered to the applicant, together with the traveling passport. The charges for the regular Russian billet de séjour, good for one year, are 75 kopecks (38 cents) and for the traveling passport 5.50 rubles ($2.82).

If the stay is not over six months, the national passport bearing the authorization from the Russian authorities is required to be produced at the frontier to the gendarmes who examine and return the same to the traveler. If the stay is over six months, the Russian traveling passport, together with the national passport, must be exhibited, the first one being retained by the gendarmes and the latter returned to the bearer.

HOTEL AND HOUSE REQUIREMENTS.

Every person arriving in Russia is required to surrender his passport to the owner or manager of the hotel or house he stops at, and if married, give all information as to the names and ages of his wife and children, so as to enable the house owner or hotel proprietor to complete the blank prescribed by law, for submittance, with the passport, to the respective police district station for registration. The blanks are made out in duplicate, one copy being filled out at the police station and the other forwarded to the address bureau, at which place it is possible to learn the address of anyone residing, temporarily or otherwise, in the city.

A similar blank is filled out when the party moves into another house or leaves the city, notation being made as to the destination. The traveler in leaving need only inform the hotel management or house owner, provided he is living in private apartments, of his departure and give the name of the city or country he is bound for.

All passports containing the names of more than one person should give the names of each one in full and should not allude only to "wife," or "children," etc.

POLICE REGISTRATION FEES.

The blanks heretofore referred to, and required to be filled out by the police department, contain the following information: Name of police district, street and house address; full name of the person registered; rank of Russian subjects or the nationality of foreigners; age; faith; when and by whom the passport was issued and date of expiration of the same; profession or occupation; names and ages of wife and children.

The fees are as follows: Registering arrival of a nobleman, 20 cents; a commoner, 10 cents; other classes, 2 cents; a foreigner need not appear personally at the police station but may send his passport for the proper visé by a messenger. Upon departure, the cost of viséing the passport at the police station is 13 cents.

RAILWAY TRAVEL—HOTELS AND PENSIONS.

Traveling on the Russian railways is not attended with any particular danger of accidents, as the trains do not run at great speed, averaging about 25 miles an hour on the main lines and 20 miles on the branches. All through trains carry sleepers, either the wagon-lits or regular Russian sleepers, the latter being preferred by many, as well as diners where one may have a meal at reasonable cost. Along the routes there are also restaurants where excellent lunches and meals may be had very cheap. The trains stop always at the leading villages for half an hour, which gives the traveler sufficient time to dine at the railway restaurants.

The actual cost of traveling in Russia is much less than in the United States, especially if one takes a second-class ticket, which is quite as satisfactory as first class, provided the trains are not crowded. The actual second-class tariff is very little over 1 cent a mile. Any one speaking German or French will experience little trouble in journeying throughout Russia, although in the remote districts and along the Volga only the vernacular is spoken.

In all cities of any size very good hotel accommodations will be found at a cost less than in the United States. The European plan predominates, but at the smaller places and at pensions lodging also includes meals. Rooms in the leading hotels of St. Petersburg and Moscow are from $1.50 a day up, and excellent dinners may be procured at the best restaurants and dining places for $1.50, including the tip. A la carte is very expensive. Guides charge $3 per day, not including their luncheon. The common cab can be secured at 40 cents an hour, but a team hired through the hotel costs $7.50 a day, including driver, who must also be liberally tipped.

INDUSTRIAL DEVELOPMENT.

Poland and the western part of European Russia are the chief industrial sections of the Empire, there being no manufactures in South Russia of importance, except the smelting and working of iron, and none of great consequence in other portions of the country. Moscow, Lodz, Kharkoff, and Warsaw are the industrial centers of the country, and St. Petersburg, Reval, Windau, Novorossisk, Nicolaief, Rostoff-on-Don, Odessa, Riga, and Libau are the principal ports of European Russia. Batum, on the Black Sea, is the principal outlet for the products of the Caucasus, and Vladivostok is the only important Pacific seaport of the Empire.

INCREASED NUMBER OF STOCK COMPANIES.

The growing demands of the Russian market are causing noticeable increases among the productive forces of the country and some branches of industry have reached a high state of development. The increase in the number of joint-stock companies for exploiting both new industries and such as had already been started since 1903 is shown by the following table:

Years.	Russian companies.		Foreign companies.		Total.
	New undertakings.	Existing undertakings.	New undertakings.	Existing undertakings.	
1903	27	44	11	1	83
1904	29	54	8	5	96
1905	15	49	6	3	73
1906	31	73	8	2	114
1907	33	85	15	3	136
1908	35	72	12	0	119
1909	40	73	12	3	128
1910	67	114	11	6	198
1911	101	121	36	4	262

In the three years 1909 to 1911 the capital of the newly authorized and reorganized companies amounted to $336,800,000, of which $271,600,000 belonged to Russian companies and $65,200,000 to foreign concerns. The companies founded during those years absorbed $154,750,000 capital, and the remaining $182,050,000 was used in the continuation and extension of existing enterprises. The following table shows the number and capital of the joint-stock companies beginning operations in the different industries during the last three years:

Industries.	Companies.			Capital.		
	1909	1910	1911	1909	1910	1911
Textiles	9	10	17	$7,750,700	$5,002,200	$11,116,300
Paper and printing	3	8	4	1,609,400	2,240,300	3,038,500
Mechanical woodworking	2	5	.....	437,700	759,600	.....
Metal works	4	9	13	1,107,200	13,653,700	9,419,300
Manufacture of:						
Mineral products	.....	1	6	.....	77,200	2,267,500
Animal products	2	2	7	824,000	257,500	1,442,000
Foodstuffs	12	17	26	4,004,100	10,609,000	12,030,400
Chemicals	5	11	6	983,600	2,615,700	1,776,700
Mining	13	9	28	10,226,400	8,178,200	27,325,400
Distributive enterprises:						
Commercial	17	15	28	3,569,500	4,572,200	13,214,900
Carriers	3	7	5	2,729,500	4,959,400	3,240,900
Sanitation, etc	5	8	15	669,500	2,363,800	4,345,600
Miscellaneous	7	2	6	4,738,000	669,500	2,047,100
Total	82	104	161	38,649,600	55,958,300	91,264,600

GROWTH IN RECENT YEARS.

Comparison of the industrial census returns of 1887, 1897, and 1908 shows that the number of industrial concerns in the Empire increased from 30,888 in 1887 to 39,029 in 1897 and 39,494 in 1908. The number of employees was 1,318,000 in 1887, 2,098,200 in 1897, and 2,668,800 in 1908, while the value of the output rose from $687,267,000 in 1887 to $1,462,136,000 in 1897 and $2,526,847,000 in 1908. It is noted from these figures that the output has increased more rapidly than the number of concerns, indicating an increase in the average size of the latter. The average number of employees per establishment increased from 42.9 in 1887 to 69.1 in 1908. The producing capacity of the average employee has also increased, being $520 per year in 1887 and $932 in 1908.

The industrial progress made by European Russia between 1900 and 1908 is indicated by the following table:

Industries.	Number of establishments.		Output (1,000 dollars).		Number of operatives.		Horsepower of engines.		Raw materials used (1,000 dollars).	
	1900	1908	1900	1908	1900	1908	1900	1908	1900	1908
Cotton	730	762	273,606	459,052	399,903	505,557	279,590	377,837	192,706	308,574
Wool	916	1,016	92,873	123,808	136,638	148,470	61,715	94,057	59,195	75,548
Silk	309	189	15,968	18,053	31,976	29,988	5,167	7,763	10,039	10,755
Flax	403	273	34,456	48,566	79,391	90,456	31,872	51,338	20,745	27,376
Paper	1,069	1,302	41,213	67,350	71,965	86,713	63,160	85,227	19,621	29,236
Wood	1,430	1,882	50,440	62,989	73,964	92,339	43,915	75,821	33,341	37,909
Metals	1,804	1,920	192,375	220,202	240,907	246,630	167,036	205,609	108,662	107,617
Animal products	1,254	1,015	57,593	81,718	50,947	60,809	8,555	17,964	45,417	61,390
Minerals	1,591	1,480	41,497	49,502	127,970	132,783	38,484	43,514	9,002	9,915
Foodstuffs	2,501	2,721	189,961	336,505	71,797	87,526	123,847	184,986	157,520	279,357
Chemicals	354	379	47,747	86,412	30,430	41,485	23,894	49,828	30,565	45,802
Mixed textiles	341	382	17,257	26,765	27,391	36,266	6,669	11,900	10,037	13,874
Total	12,702	13,321	1,054,986	1,580,922	1,343,279	1,559,022	853,904	1,205,844	696,850	1,007,353

In this table there have been excluded from the 1908 columns all undertakings such as had not been inspected in 1900, viz, mines, railway workshops, oil fields, works of the Ministry of Marine, and all undertakings paying excise duty.

The industrial development shown by these statistics was primarily due to the extension of mechanical production and improvement in the engines used. The output increased by 49.8 per cent, the raw materials used by 44.6 per cent, and the horsepower of the engines used by 41.2 per cent. On the other hand, the number of establishments showed an increase of only 4.9 per cent, the number of operatives 16 per cent, the number of engines 20.8 per cent, and the fuel used 16.7 per cent. The total amount of wages paid by these concerns showed an increase of 39.9 per cent, while the average pay of each operative was increased 20.5 per cent.

INDUSTRIAL EMPLOYMENT OF WOMEN AND CHILDREN.

Russian legislation regarding the employment of women and children is strict, but the number of women employed in factories is increasing more rapidly than that of men, chiefly on account of the increasing demands for female labor on the part of the textile and kindred industries. Children under 12 years of age may not be employed in factories. Children between 12 and 15 years of age, classed as "maloletniye," may be employed only for day work, and for not more than two periods of four hours each in one day, with sufficient time between to permit of recreation. Children of 16 and 17 are classed as "podrostki" (youths) and subject to some limitations. The labor of persons 18 years of age and over is regulated only by general labor legislation. There is no legal old-age limit.

The following table shows the extent of the employment of the different classes of labor in percentages of the total number of employees. The figures given cover only the laborers employed in those industries which are of sufficient size to come under factory inspection. Domestic industries are not included in these returns:

Years.	Adults.			Youths.			Children.			Total.	
	Male.	Female	Total.	Male.	Female	Total.	Male.	Female	Total.	Male.	Female
	Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
1904	65.43	23.43	88.86	5.84	3.68	9.52	0.95	0.67	1.62	72.22	27.78
1905	65.10	24.19	89.29	5.71	3.51	9.22	.89	.60	1.49	71.70	28.30
1906	64.11	25.30	89.41	5.57	3.58	9.15	.87	.57	1.44	70.55	29.45
1907	64.48	25.02	89.48	5.42	3.61	9.03	.89	.58	1.47	70.79	29.21
1908	63.87	26.01	89.88	5.13	3.52	8.65	.86	.61	1.47	69.86	30.14
1909	63.60	26.40	90.00	5.07	3.53	8.60	.81	.59	1.40	69.48	30.52
1910	63.08	26.82	89.90	5.13	3.57	8.70	.82	.58	1.40	69.03	30.97

GENERAL INDUSTRIAL SITUATION IN 1912.

In spite of a decrease in foreign trade and a certain weakness in the agricultural market, 1912 may be considered as a prosperous year for Russia. The greatest activity was shown in industrial enterprises, banks, and the stock exchanges, and the results from industrial development, the strengthening of the money market, and the rise in the value of stocks to some extent offset the adverse factors. The industrial activity which started, after a long period of depression, in the second half of 1909, continued throughout last year, as was evidenced by the increased demand, high prices, an abundant supply of capital, the starting of new enterprises, the enlargement of old ones, and a considerable increase in profits.

The metallurgical industry, working at full speed, was unable to satisfy the demand, and even with large importations from abroad there was an insufficient supply of cast iron. The strong call for iron and steel throughout the year was due principally to the great increases in building in cities and in railroad construction. The output of copper, coal, and oil also increased considerably.

The cotton industry was hampered by the business conditions during the last two agricultural campaigns, and late in the year by the Balkan war and the insolvency of a number of firms. The flax industry was in a favorable condition, owing to increased activity in Russian factories and the rise of the exports. The wool factories had plenty of work and were aided by orders from the War Department.

Notwithstanding the high prices of raw material and the scarcity of labor the leather industry developed greatly, owing to the steady and strong demand for its finished products. The sugar campaign was unfavorably affected by weather conditions. The sugar market was depressed at the beginning of the year by overproduction, but prices rose in the fall, when it became evident that the beet crop would be poor. The injury to potatoes and beets by early frosts had an unfavorable influence on the production of spirits. Strong demands for their products were felt by the flour, chemical, brick, cement, and tile trades.

A steady increase in both the domestic and foreign markets placed the timber industry in a prosperous condition, and new factories were opened for the production of parquetry and veneers, etc. The production of the commoner kinds of paper was also increased. The wider use of electrical energy during the year stimulated the production and importation of motors and dynamos.

INCREASED ACTIVITY IN BUILDING TRADES.

Building was unusually active in 1912, both in the cities and in the villages, where the use of fireproof material is making continual progress. The revival of construction work was closely connected with the comparatively good results of the crops, the satisfactory situation of the money market, and the continuously increasing demand for buildings, particularly in cities and industrial centers. Many undertakings remained unfinished, chiefly on account of the lack of building material, especially bricks and cement, the high prices, and the lack of skilled workmen. The increased demand for the standard building materials resulted in the establishment of a number of new works for the production of cement, bricks, tiles, etc., and also exercised a great influence on prices, which were often established by mutual agreement. The downward tendency of prices on some building materials observed during the autumn months was chiefly influenced by temporary difficulties in connection with the events in the Balkans; other causes were the increase of production and the waning of the syndicate's supremacy. There was, however, a lively demand for building material until the end of the year.

The increase in the prices of prepared materials was often caused by the rise in the price of the raw material, as a result of an agreement among the suppliers of the latter. The continuous advance in the price of building material caused the protests of municipal

institutions, which found it necessary to establish their own works for self-protection, notwithstanding the fact that a considerable number of new concerns had begun operations in the course of the year. The increase in the production of cement is estimated at several millions of barrels.

The building season in Moscow and vicinity was marked by great activity. The number of structures erected surpassed even the record year of 1904. The increase of building was accompanied by an unusual rise of the prices of bricks. As these could not be supplied in sufficient quantities by the local brick kilns, they were brought from Nizhni Novgorod, Yaroslav, Vladimir, etc. An increase in the prices of cement, beams, etc., resulted. About 30 to 35 per cent of the buildings remained unfinished in consequence, and many orders have already been placed for the coming year. A number of structures could not be completed for the lack of laborers.

SCARCITY OF MATERIAL RAISES PRICES.

The building season in the Volga cities was also brisk and the prices of building material showed an improved tendency, which was partly caused by the bad state of the roads during spring, difficulties being experienced in the delivery of material. In some cities an increased building activity was created by unusual demands for dwellings.

In Saratov construction work was stopped in several instances in consequence of the scarcity and high price of material, such as bricks, cement, etc. In Samara the construction of houses, canalization work, and other constructions were carried on with many interruptions because the brick works were not able to fill their orders at the given time. The building season in the Ural and Siberia took a quiet course.

Building material is expensive in Siberia, on account of the great distance that it must be carried and the cost of transportation. Construction work, therefore, progresses slowly.

In the south of Russia, also, the building boom resulted in the development of the building-material trade, especially bricks. In Kief great difficulties were experienced in the delivery of beams, iron bars, and cement, and construction work was greatly impeded by accidents and the high prices maintained by mutual agreements of syndicates. The opening of the building season in Odessa was retarded by continuous wet weather. In spite of this the supply of building material left over from the season was not considerable, although the local brick works had produced 41,000 bricks, in comparison with 36,000 in 1911.

The increased production of cement in the Polish Provinces caused the dissolution of the local cement syndicate. Prices were, nevertheless, kept at a high level, with a considerable increase in beams, lime, etc. The constructive period in the northwestern Provinces was less active than in 1911.

In the Baltic Provinces building material found a ready sale. Prices of bricks and cement remained high in St. Petersburg, where a lack of labor was also experienced.

The imports of building material during the first 10 months of 1912 totaled 400,000 tons, as compared with 300,000 tons during the

same period of 1911 and 228,900 tons during the first 10 months of 1910. The exports for the same period were 96,800 tons, 60,000 tons, and 76,000 tons, respectively. There was a considerable increase in the imports of cement, while the exports of that article decreased.

LEATHER TRADE.

The importance of the leather trade of Russia is indicated by the following table showing the importations of leather over the European frontier during the past four years, as classified by the customs schedules:

Description.	1909	1910	1911	1912
Tanned, dressed with alum, tawed: Chamois, calf, skins of fish and amphibious animals, tawed thongs for sewing ends of machine belts	$3,754,865	$5,534,190	$4,382,135	$3,076,095
Morocco, glacé, kid, shagreen, bearing stamped patterns, lacquered, etc	2,046,095	2,206,775	1,878,205	1,792,715
Large skins: Ox, cow, buffalo, horse, ass, pig, in whole or half skins, without stamped patterns, grained or not, even with artificially-stamped grain, dyed or undyed	1,482,685	2,135,190	2,208,320	1,652,635
Parchment	2,575	2,575	6,695	31,930
Lacquered skins, large	1,254,025	1,576,930	1,757,180	1,470,325
Total	8,540,245	11,455,660	10,232,535	8,023,700

POSITION OF THE UNITED STATES.

The true position of the United States in the leather trade of Russia is not shown by the Russian import statistics. According to these figures, in 1911, the latest year for which data are available, Russia proper imported over all its frontiers $10,744,932 worth of leather, of which Germany supplied $8,417,667 worth; Finland, $763,420; France, $454,878; Persia, $429,157; Great Britain, $236,026; Austria-Hungary, $182,076; and the United States only $28,693. This low amount of imports from the United States is indicative of the lack of direct trade between the American leather manufacturers and the Russian buyers, rather than of small use of American leather in Russia, as large amounts of American leather are imported by way of Germany.

The Russian leather trade demands a large assortment and supply of stock, and hence requires ready capital. American leather merchants require cash payment f. o. b. New York, or upon presentation of invoices at the bank agreed upon, leaving the Russian dealers to wait for several months before the goods are received. German, French, and Danish commission houses have agencies in Moscow and ship the leather from warehouses in Germany or Denmark, where it has been examined and assorted. The German houses give credits of 6, 8, and even 12 months on notes of exchange accepted by the banks. The French grant credit, but for shorter terms and on more exacting conditions. The French practically control the trade in high-grade vici kid, and are therefore in a position to dictate terms.

SHOE LEATHER.

Leather of every description is manufactured in Russia and is approaching a good standard. Manufacturers of American sole leather

controlled the market a few years ago, but it has now passed into the hands of domestic and European manufacturers. Kid and vici kid, known in Russia as chevreaux, of all grades are becoming greatly in demand. American manufactured kid covers the middle and lower grades, but Moscow dealers say that it lacks thorough drying before dyeing, and proper classification and assortment after the finishing process is completed. This neglect on the part of American manufacturers hampers the trade to a great extent.

There are hundreds of small shoe shops in Russia which prepare shoes for the merchants, but these shops buy only one or a few packages of kid at a time. Each package is supposed to contain one dozen carefully assorted pieces of the same kind, in color, grain, finish, and thickness. This method of packing is followed by all exporters except the Americans. One experienced wholesaler stated that if the United States seeks foreign markets for leather, there is none better than Russia for kid. The heavy brogans of the women of the peasant class are rapidly going out of use, and the demand for kid of the grade manufactured in the United States is increasing. So great are the requirements that French leather firms are reported as contemplating the construction of factories in Russia for producing kid.

Lacquered and patent-leather shoes seem to wear out quickly in Russia, on account of the extensive use of galoshes, and hence are worn by only the well-to-do. There is a great demand for lacquered and patent leather for other purposes, however, such as military equipment and trimmings, uniform boots, and schoolboys' belts, etc. One Moscow firm doing a large business in this line has been buying American leather from German middlemen for years.

GOOD DEMAND FOR OTHER LEATHERS.

There is also an increasing demand for patent leather for carriage tops, made in a coarser grain from split leather, and for upholstering purposes, with polished and unpolished top, the latter being dyed and finished in Moscow.

A considerable quantity of leather is used by the peasants in their home manufactures of leather goods. Shoe and harness making afford employment for about 12,000 persons in the Governments of Tver, Viatka, Koorsk, Nizhni Novgorod, and Perm, and the industry is also carried on in the Governments of Poltava, Tchernigov, Novgorod, and Moscow. The principal center of these peasant industries is the village of Kimry, in the Tver Government. In the Kimry district there are about 10,000 shoemakers, who make some 3,000,000 pairs of shoes a year. Only a small number of these shoemakers work entirely on their own account, the others being simply hired hands in large workshops or workers at home, on orders from big contracting concerns. A Kustari shoemaker gets from 30 kopecks to 1 ruble a day.

THE TRADE IN 1912.

The Russian leather industry was beset with difficulties in 1911, as the demand from the peasants, who are the chief customers, diminished appreciably on account of the poor harvest. While there was no crisis, nonpayments were numerous and several of the weaker con-

cerns stopped operations. In the beginning of 1912 production was decreased by most of the works in the Moscow district and by some of those in the western Governments. At the same time the owners of works, to guard against future difficulties for the industry, entered into agreements to sell to minor customers for cash only and to grant credit to only the important and solid firms. The maximum term for notes (wechsels) was also reduced. The owners also attempted to deal directly with the consumers, omitting the middlemen, who played a prominent part in the difficulties of 1911 by suddenly stopping their purchases from the factory owners.

These measures all tended to make the market firmer, and the condition of the trade soon became normal. The reports of travelers that the demand for leather goods was increasing everywhere caused some activity in the market, and the traders, and later the factory owners, raised their prices. From then on the market continued to improve. The demand exceeded all expectations as early as February and March, and the dealers in the different Provinces soon disposed of their stocks. Expecting business to be brisk, they gave large orders to the manufacturers and middlemen, and the former were placed in a difficult position. The demand grew so rapidly and unexpectedly that production was unable to keep pace, and the market experienced some pressure. Prices rose considerably. The prospect of a good harvest also served to keep the market active.

In the international leather market the United States occupied a dominant position. Having overcome the leather-trade crisis of 1911, America started to purchase great quantities of leather goods wherever they could be found on the European market, and caused a general rise in prices. This was reflected in the Russian market, which is particularly closely connected with that of Germany. The raw-material market was in nearly the same position. The demand for raw materials on the interior market grew greatly, and both large and small hides were placed at high prices. American goods became scarcer on the market as the season advanced. This condition has been observed for many years, and has recently become more obvious, causing the Journal of Commerce to make a special research into the subject. That publication attributed the scarcity to a more rapid increase in population than in the supply of raw materials. This is said to be particularly the case in the United States. The number of cattle slaughtered in Argentina in 1912 exceeded the number killed in 1911 by 250,000, but the prices for raw hides rose rapidly in the international market.

FAVORABLE CONDITIONS IN SECOND HALF OF YEAR.

This was the condition of the leather market at the opening of the fair at Nizhni Novgorod. At this fair leather goods soon appeared firm and payments were made regularly. Credit was granted, but carefully, and only to solid purchasers. Prices were 5 to 10 per cent higher than in the corresponding period in 1911. After August 25, however, both market conditions and prices changed. The buyers of big lots had made their purchases and left, and business became less active, with falling prices. This extended to the raw-material trade. Prices for export were 3 rubles per pood ($1.55 per 36.11 pounds) higher than in 1911. On the interior market prices were

somewhat lower, but were still 1 ruble ($0.515) per pood higher than in the preceding year. In general, the leather trade was not as active as had been expected. It was slightly above the average, but greatly inferior to the fair of 1909.

In the latter part of the year conditions were favorable. The factory owners did not reduce their output, and their confidence in the steadiness of the demand was justified by brisk business during the last part of the summer. The Pokrovskaia fair in Kharkof proved favorable for both raw and manufactured leather goods. Other autumn fairs east of the Dnieper showed the same conditions. Bad roads made it difficult for village customers to communicate with the cities in the fall and early winter, but when sledge roads were established this difficulty ceased. At the close of the year business was brisk in both raw and manufactured goods.

HIGH PRICE OF HIDES.

The Russian tanning industry was not in a very flourishing condition in the latter part of 1912, principally on account of the uncertainty of the market arising from the contemplated action of the army in discarding top boots for the soldiers and supplying shoes. The doing away with boot legs by this change threatens the tanning industry with a loss of millions of dollars. It will be especially difficult to find means to compensate the prospective loss of a large part of the consuming market at present, when raw-material prices, which do not depend immediately upon the consumption of hide products in the interior of the country, but which must reckon with the condition of the export market, are rising rapidly.

How great this increase is may be seen from the following table of prices per hide paid by large Russian tanners for raw material, as taken direct from the account books of the factories:

Years.	Price.	Years.	Price.	Years.	Price.
1899	$2.70	1903	$3.18	1907	$3.67
1900	3.24	1904	3.76	1908	3.86
1901	3.42	1905	3.96	1909	3.95
1902	2.82	1906	3.94	1910	4.22

CHEMICAL INDUSTRY.

The chemical industry of Russia was created by the adoption of a system of prohibitory tariffs on foreign chemicals 20 years ago. Its independent importance was not recognized for a long time, and it occupied merely a tributary position to other industries, but its returns now amount to about $75,000,000 annually. This includes the production of inorganic acids and salts, dyes and varnishes, organic dyeing material, and superphosphates. Chemical works were generally built near large industrial centers, and as these were not always in regions where the required raw materials were produced, the chemical industry in certain parts of Russia could not do without foreign raw materials.

In spite of their comparatively recent establishment, some branches of this industry are well equipped and able to fully meet the demands

of the country. Among these are the producers of sulphuric and other acids, sulphates, soda, and chloride of lime. Of the other products, superphosphates and organic dyeing materials are of great importance to the economic life of the country.

SULPHURIC ACID AND SODA.

The production of sulphuric acid has shown steady growth, the output for the entire country increasing from 100,000 tons in 1898 to 165,000 tons in 1908 and 235,000 tons in 1911. The importation of sulphuric acid is now only incidental. Eight sulphuric-acid works are operated on a system of contracts, four of them according to the system of the Tentelev Chemical Works. The factories situated near the Black Sea and the Baltic use pyrites from Asia Minor and Portugal; those nearer to Moscow and on the Volga River obtain their pyrites from the Ural region. The Ural pyrites are excellent, but transportation to the Baltic Sea is so expensive that they cost twice as much in St. Petersburg as those from abroad. The Russian demand for sulphates and nitric and muriatic acids is practically supplied by the home production, as is that for soda.

Thousands of tons of soda were formerly imported each year, but although the home demand increased from 50,000 tons in 1905 to 90,000 tons in 1911, the imports during the last five years of that period did not exceed 1,600 tons per annum. The production of caustic soda in Russia also increased, rising from 40,000 tons in 1908 to 50,000 tons in 1911. During that period, Russia's imports did not exceed 600 tons per year. Nearly the whole supply of bicarbonate of soda on the Russian market is of domestic manufacture. While the sulphuric-acid works are distributed among the consuming districts, the soda factories are situated nearer the salt mines that produce the raw material, as in the Provinces of Perm and Viatka and in the southern part of Ekaterinoslav Province.

The peculiar position of the Russian chemical industry is clearly shown in the soda trade. The soda-producing works are located at the place of production of the raw material, about 700 miles from the places of consumption, so that the freight charges are high in comparison to the cost of the product at the works. The nearer the market is to the sea, the dearer is the Russian product, and the cheaper the foreign product shipped by sea. It is evident from this situation that the Russian producers could not sell their product on the western and northwestern borders were it not for the support of the tariff, as the price of the soda at the point of production is almost equal to the cost of the foreign goods.

CHLORIDE OF LIME—SUPERPHOSPHATES.

This also applies to the chloride of lime industry, which has acquired a firm footing. The price of chloride of lime at the works is about $1.42 per 100 pounds, or less than the duty exacted of $1.64 per 100 pounds, but the freight to the place of consumption amounts to about 50 per cent of the selling price. This makes the cost of domestic chloride of lime so high at the Baltic ports that it would not be able to compete with the foreign product without the protec-

tion of the tariff. In 1911 the domestic production of chloride of lime amounted to about 54,000,000 pounds, while the imports totaled only 722,000 pounds.

The production of superphosphate has not attained any considerable development in Russia. In 1910 only 14,000,000 pounds were produced, an increase of 1,400,000 pounds over the preceding year. The imports of chemical fertilizers, however, have shown an even more rapid growth. In 1912 out of 464,940 tons of fertilizers imported, 187,750 tons represented superphosphates and 52,110 tons represented phosphorites, against 169,663 tons and 31,878 tons, respectively, in 1911, while the imports of superphosphates in 1908 amounted to 38,424 tons, and in 1910 to 132,850 tons.

The gradual increase of the imports of unground natural phosphorites on the one hand indicates the growth of the production of superphosphates in Russia, and on the other emphasizes the fact that in spite of the existence of an abundant supply of phosphorites in Russia, the superphosphate industry can not do without imported raw material. This industry made considerable progress in 1912, two new factories having been opened. During the entire year there was an active demand for this product; the prices remained on the same level notwithstanding the increased cost of fuel and raw material.

In the west and northwest of Russia, where the production and consumption of superphosphate are centered, there is no raw material, and the works are obliged to import their supplies. The Russian factories are still small, while the output of some of the foreign works reaches many millions of pounds. Furthermore, the latter often have the advantage of cheap sulphuric acid, as in Germany, where the waste acid from the zinc industry is used. Because of its cheapness superphosphate does not justify the expense of transportation to a great distance, and must, therefore, be a local product. For this reason the investigations made by the ministry of agriculture in regard to Russian phosphates are of great importance. Such investigations were made in Kostroma Province, and although the raw material does not show as high a percentage of phosphorus as that in Podolia Province, the trials made at preparing superphosphate from it were evidently successful, as a superphosphate factory is already operating on the Volga.

DYES AND OTHER CHEMICALS.

The production of organic dyeing substances is at present concentrated in the industrial districts of Riga, Warsaw, and Moscow, and is based exclusively on the working of foreign partly finished materials, as no raw material, such as the products of dry distillation of coal, is to be had. The few gas works sell their products of distillation as they are, without any further finishing, and the inconsiderable demand for ammonia is also met by the gas works. The coke works in the Donetz district are abandoning the primitive methods of coke production for an improved method permitting the utilization of the by-products. As a result, in 1912 there were placed on the market some products of this class, the Russian demand for which has not yet been ascertained. This is particularly true of ammonia and its products. Owing to the absence of demand, the

price of spirits of ammonia fell sharply during the summer. The market was so crowded that one of the factories in Poland was compelled to resort to exportation, as at one time the price in Russia was lower than in Germany.

It has been observed that the center of the chemical industry is moving toward the east. The Volga presents a convenient and inexpensive waterway for forwarding the fuel required, such as pyrites, salt, and fuel. The development of the railway lines crossing the Volga will allow the unimpeded exportation of the products, and the increase of population will create an interior market. The natural foreign markets of Persia and Siberia could be supplied from this region.

Another important center of a special chemical industry will be the Donetz coal district after the improvement of coke production. The development of the by-products, especially ammonia, will represent an independent branch of the chemical industry, and will doubtless create other industries, such as the production of sulphuric acid and soda.

THE RUSSIAN CHEMICAL INDUSTRY IN 1912.

The Russian chemical factories were busy throughout 1912, and chemical products found a ready sale. In some instances there was a lack of chemical supplies that are consumed in large quantities. In consequence of the increased demand several new small concerns were established, including a factory for the production of sulphuric acid in Poland.

Prices, which had been steady during 1911, with few exceptions remained without alteration during the first three months of 1912. Then there was a considerable rise in the price of coal, partly owing to the colliers' strike in England, in consequence of which the freight rates were increased, which in turn caused an increase in the prices of some of the imported chemical goods, such as pyrites, Chile saltpeter, sulphuric acid, nitric acid, alumina, borax, yellow potash, etc. The upward tendency was most marked in the case of the last product, the supplies of which were greatly exhausted, both in Russia and Germany, in consequence of the increased demand, the limited production as a result of strikes, and the growth in prices of raw material.

The rise of the cost of white lead, blue copperas, and other salts and alloys was caused by the increase of the prices of lead, zinc, and copper, which were maintained until the end of the year. The decrease noted in the cost of some metals during the last months of the year has so far had but little influence on the price of chemical salts and alloys.

There is still a considerable demand for Glauber's salts, as the Russian works can not produce this article in sufficient quantities, in consequence of the impossibility of disposing of the hydrochloric acid. Attempts to utilize natural Glauber's salts for industrial purposes have not met with any notable success, because of the high freight rates from the place of production. These high rates are partly the result of the refusal of the railways to transport this product loosely in cars; transportation in sacks is required, which adds 10 per cent to the cost.

LOWER PRICES FOR SODA—NEW BY-PRODUCTS—CHEMICAL DYES.

Caustic and calcined soda led among the chemical products that decreased in price in 1912. The average price of the latter went down to $1.65 per 100 pounds, as against $1.71 in 1911 and $1.75 in 1910, while the price of caustic soda was lowered to $3.52 per 100 pounds, against $3.59 in 1911 and $3.65 in 1910. The wide use of soda products in the industries makes even such a comparatively slight increase noticeable.

The artificial-dye industry is only developing in Russia, and the decrease in the price of aniline salts from $19.04 to $16.61 per 100 pounds is noteworthy. This reduction stands in connection with the lowering of prices by the syndicate of aniline dealers in Germany, who, it is asserted, reduced their prices in order to exercise a pressure on the dealers that had not joined the syndicate. This explanation is probable in view of the fact that the raw material, benzol, has risen somewhat in cost in consequence of limited production.

The imports of Chile saltpeter increased to 60,736 tons in 1912, against 34,866 tons in 1911, and Stassfurt salts rose to 91,350 tons, against 74,808 tons in 1911. Norwegian saltpeter enjoyed a lively demand and ready sale, the prices following next to those of the Chilean product.

MANUFACTURE OF PAPER.

Russia's paper mills are largely dependent on Finland, Germany, and Austria-Hungary for raw material, which dependence is supported by the preferential tariff in favor of Finland. On account of Finland's proximity to Russian ports of entry, wrapping and wall paper are frequently carried in ballast. Paper manufacturing has been long concentrated in the hands of the Finns, and the technical features constantly improved by the introduction of new inventions in machinery and discoveries in chemistry. In 1911 there were 158 factories manufacturing paper and paper goods in Finland, employing about 15,000 workmen and having an annual output of approximately $9,000,000.

Forty years ago the paper-making industry of Finland was of little importance. Small beginnings were commencing to show possibilities of future development in the early eighties, and the example of Norway and Sweden did much to stimulate Finland in this direction. In 1885 there were only some 2,000 persons employed in the Finnish paper and pulp industry, while in 1895 the number had increased to 4,000, and in 1905 to 11,000. In 1911 it was estimated that 15,000 persons were employed in the paper mills and factories. The machinery employed in the paper and allied industries now requires about 90,000 horsepower, as against 14,000 horsepower in 1890.

Finland and Russia combined supply only about 3½ per cent of the total amount of paper produced in Europe, yet on account of its immense forests, accessibility to the ocean, and its numerous waterfalls, the former country is certain to play an important part in the world market in the future.

INDUSTRY GROWING IN RUSSIA PROPER.

Paper making is carried on extensively at many important commercial centers in Russia, including the Governments of Moscow, St. Petersburg, Novgorod, Livonia, Vladimir, and Kaluga, and it also prospers in the Governments of Perm, Vologda, Kiev, Vilna, Tula, Viatka, Kostroma, and Vitebsk. In 1911 there were 6 factories producing mechanical wood pulp, 5 making sulphite pulp, and 3 specializing in cellulose products. About 50 concerns produced cardboard, engaged in the manufacture of printing papers. There were only 7 other houses produced writing papers of medium qualities, compared with those of other European countries, and some 30 companies were engaged in the manufacture of printing papers. There were only 7 mills making news paper, but there is a disposition to increase this number to supply the demands of Russia, which is now dependent on Finland. Seven firms made paper hangings, and 7 others produced only cigarette papers. The best class of fine paper was manufactured at 3 factories, drawing papers at 2, straw papers at 2, and sulphite paper at 1.

Formerly all cigarette paper was imported, but Russians have recently undertaken to supply themselves, as the demands are extremely large. They appear to be succeeding in the manufacture of this kind of paper and its subsequent fabrication into tubes, which are supplied with paper mouthpieces. Many of the factories are equipped with machinery of the latest type and run by electric motors, while others are content with old-fashioned installations.

Competition in papermaking is keen, but various firms in Moscow report that profits under favorable conditions are high, reaching 60 per cent at times. This applies especially to the production of cellulose, both bleached and unbleached, of which Finland appears to have the advantage in the facilities for manufacturing. Russians have attempted at several places to compete, but failed because of the inferiority of their products and the almost prohibitive cost of production. Russia manufactures every quality and design of paper, but local dealers state that, as a rule, the products are inferior, except news paper, which is claimed to be superior to that manufactured in Germany and Austria, the texture being firmer.

PRICES, GRADES, AND IMPORTS.

Prices here are always higher than in neighboring countries. Paper selling at 3 to 4 cents a pound in Germany brings 4½ to 5½ cents a pound in Russia, with a credit of nine months or more. Stationery of the better qualities is imported, principally from European countries, but a small portion comes from the United States. The latter country supplies much of the typewriter paper that is used, but its other classes of stationery, while of excellent quality, are almost prohibitively expensive. Letter paper in double sheets is used by all classes, although single sheets are slowly being adopted by commercial houses. Postage being higher than in the United States, the use of thin paper is necessary. American manufacturers should secure samples of the paper used and copy the styles, improving upon them, if possible, according to the tastes of the Russians.

Importations from the United States of cardboard for the manufacture of boxes, wrapping paper of various types, and paper bags, as well as the many styles of wall paper, both cheap and expensive, must be quoted at the lowest prices consistent with correct business principles, or they will be driven out by European competition.

Russia imported 260,294,526 pounds of paper and manufactures thereof in 1911, the countries of origin and the amount supplied by each being as follows:

Countries.	Pounds.	Value.
Finland	246,874,612	$9,719,102
Germany	9,326,745	2,411,095
Great Britain	1,404,932	197,787
Austria-Hungary	1,110,974	114,420
France	486,114	101,219
Netherlands	242,859	43,331
United States	524,466	21,758
Belgium	35,607	16,552
Japan	117,764	14,630
China	152,721	13,206
All other countries	17,732	25,900
Total	260,294,526	12,679,000

PRODUCTION INCREASING.

The Russian paper industry showed much activity during 1912. The demand for packing and wall paper caused an increase in production. Several new factories were established, chiefly for the manufacture of paper from wood pulp, which is increasing in use, while the use of rags is diminishing. There are some 60 joint-stock companies in Russia engaged in paper manufacturing, with an aggregate capital of about $28,000,000, of which the largest is a wood-pulp paper company at Pernau, capitalized at $5,000,000. Nineteen other concerns are capitalized at between $500,000 and $1,000,000 each.

Notwithstanding the increased production of paper, the Russian demand necessitates the annual importation of $8,000,000 worth from Finland and $4,000,000 from other countries. During 1912 vegetable fiber and rags to the value of $750,000 and paper pulp, chiefly cellulose and wood pulp to the value of $975,000, were imported for paper making. Wood pulp was imported chiefly from Finland, followed by Germany and Austria. The importation from Austria dropped from $105,000 in 1911 to $80,000 in 1912. The imports of paper and paper goods last year were valued at $13,600,000. Three-fourths of the imports came from Finland, which furnishes nearly all of the packing and ordinary white and colored papers, and cardboard. A considerable amount of sensitized paper and paper collars, flowers, lamp shades, etc., are imported from Germany. The imports of cardboard, drawings, and books in 1912 decreased by about $20,000. These articles come chiefly from Germany and Austria, and are made up principally of bound and unbound books, picture post cards, engravings and drawings, pictures on paper and canvas, etc.

MANUFACTURE OF FARM IMPLEMENTS AND MACHINERY.

The manufacture of agricultural implements and machinery has grown rapidly in Russia in the past decade. In 1890 there were 181 factories in the Empire producing these articles, with a total annual

output of $2,616,200. In 1900 the value of the output had risen to $6,180,000; in 1908 to $19,570,000; and in 1911 there were 820 factories whose output of agricultural implements and machines aggregated $25,904,500, in addition to $3,605,000 worth produced by the peasant workers and $2,163,000 spent for repairs. The regional distribution of these factories in 1911 is shown by the following table:

Regions.	Factories.	Output 1911.
New Russia (Bessarabia, Kherson, Taurida, Ekaterinoslav, and Territory of the Don)	157	$14,013,150
Poland	140	2,129,010
Little Russia (Kharkof, Poltava, Tchernigov)	40	2,124,890
Central agricultural Provinces (Kursk, Orlov, Riazan, Tambov, Tula, Voronezh)	73	1,664,995
Industrial Provinces (Vladimir, Moscow, Kaluga, Tver, Yaroslav, Kostroma)	48	1,601,135
Middle Volga Provinces (Saratov, Simbirsk, Penza, Nizhni Novgorod, Kazan, Ufa)	63	824,000
The Caucasus	37	211,665
Siberia	8	40,685
Other regions	254	3,303,725
Total	820	25,913,255

The output for the Empire in 1911 is divisible by classes, as follows:

Classes.	Value.	Classes.	Value.
Machinery for soil preparation	$4,649,421	Machines for preparing cattle food	$712,273
Seed drills	3,918,572	Horse-operated machinery	1,451,908
Machines and implements for haying	226,238	Motor-driven machinery	1,578,545
Machines and implements for grain gathering	6,166,073	Other machinery	2,567,444
Thrashers	3,474,827	Total	25,913,255
Winnowers and grain sorters	1,167,954		

RUBBER GOODS.

The manufacture of rubber goods has developed into a large industry in Russia within the past two decades, with an annual output of about $50,000,000. One of the largest manufacturing companies in Russia began the production of rubber overshoes in 1890. Within three years its output was 4,000 pairs per day, and in 1912 it turned out 42,000 pairs daily. Russian rubber goods easily compete in the world's markets and the imports of rubber goods into the country are inconsiderable. Russia at present exports rubber overshoes to Sweden, Norway, Denmark, the Near East, China, South America, and Australia. The manufacture of rubber tires is also increasing in Russia, and Russian-made tires are already on the South American market.

CEMENT.

The preference given to iron and concrete in municipal and railway construction work has created a demand for Portland cement in Russia which the existing factories have been unable to meet. The cement works of the Moscow district increased their annual capacity from 320,000 tons to 410,000 tons in 1911. In the Baltic Provinces and St. Petersburg the cement manufacturers increased their production in 1912 to double the 1910 output, and many new mills were erected. In spite of these increases in output, the imports of Portland cement

from foreign countries, principally Germany and Sweden, amounted to about 450,000 barrels.

In view of the insufficiency of the domestic supply, there has been some demand for the admission of this product free of duty, but the amount of new capital that was invested in the industry in 1912 renders such a step unlikely. In South Russia alone the production will be increased to 600,000 tons per annum, and new works are also being erected in other parts of the Empire. Imported cement is only slightly higher in price, including the duty, than domestic, the imported article selling for $2.32 per barrel and the domestic product for $2.06 to $2.16 per barrel.

The price of coal is a large factor in the determination of the price of Russian cement. The manufacturers of the northwest use only imported coal, as experiments with coal from the Donetz Basin have not proved successful. It is calculated that a rise of ½ cent per 36 pounds in the price of coal would cause an increase of 2 to 2½ cents per barrel in the price of cement.

Negotiations have been started for the creation of an all-Russia cement syndicate for the development of the industry. Cement, on account of its price, can not be shipped to markets more than 400 miles from the factory.

MATCHES.

There are 125 match factories in Russia, of which 19 operate on a large scale. The largest plants are in the Novgorod Government, where one company turns out not less than 464,000 cases per annum. Aspen is considered the best wood for match sticks; poplar and lime-wood being used only where no aspen is obtainable. Several factories engage solely in the production of match sticks, although most of the match factories produce their own sticks. Hand labor was formerly used extensively for cutting the wood for match sticks, but it has now given way in most of the factories to machine production. In districts where manual labor is cheap, the match sticks are placed in the dipping frames by hand, but this process is also now largely performed by machinery. The manufacture of ordinary sulphur matches has largely been given up in favor of safety matches, which are sold under the name of Swedish matches. Matches sell for 5.15 cents per 10 boxes, or $3.60 per 1,000 boxes at wholesale. The more important firms engaged in manufacturing matches recently formed a syndicate, as a result of which it is expected that the price per 10 boxes will be increased to 7.72 cents. Wax matches are manufactured on a small scale, but do not meet with extensive sale on account of their high price. [A list of names of Russian match factories is on file in the Bureau of Foreign and Domestic Commerce.]

PEASANT INDUSTRIES.

The peasants of Russia, under serfdom, were largely the manufacturers of the country. Working in groups or singly for their masters, they produced a great part of the clothing, furniture, and implements used; also the laces, decorative articles, and ornaments of the church and home. Both men and women possessed creative and artistic instinct and remarkable skill of hand.

After the emancipation of the serfs in 1861 these industries largely died out. The peasants, without direction, without capital, and with no market except that afforded by the middlemen or peddlers, who bought at their own price or not at all, were unable to carry on their former handicrafts. This was especially true of the women needleworkers and weavers. Unable to support existence by the products of the land alone, on account of exhaustion of the soil, the primitive methods of cultivation, and, most of all, because of the long winter season, when all farm labor is at a standstill, the condition of the peasants became almost that of starvation. During the winter it was necessary for the younger men and women to leave their villages and go to the larger towns and cities to work under conditions that were almost as bad as those at home.

Owners of estates, private individuals, and the Government began to make an effort to preserve and restore the peasant industries. "Centers" were established to provide materials, guidance, and assistance in finding sale for the finished products. Training schools for needleworkers and weavers were founded, some under private individuals, as that of Princess A. D. Tenisheff, in the district of Orel, others under Government protection, as the Empress Mary School at St. Petersburg. Commissioners were appointed by the Government to assist in the work.

THE WORK OF AN AMERICAN WOMAN.

Some 10 years ago, Madame Vera de Blumenthal, a born Russian, then a resident of Chicago, now of Pasadena, Cal., became interested in this effort to aid the peasant women of her native land. Through Prof. P. Milukoff she received a package of peasant-made lace and drawnwork, which she sold privately. To the regular market price charged her for the goods she added a sum for the workers. From that time on she has received each year increasing amounts of the Russian peasant needlework and has, in a number of districts which are now organized, established funds for the benefit of the workers, besides paying them more than the regular market price for the goods received. In one district the women now have an account in their own name in the bank, from which they can draw without interest for materials or pressing needs. In another, young girls are receiving training in the lace schools from the fund established by Madame de Blumenthal. In a third district the fund is used to provide materials and to enable the women to do elaborate and artistic work which would not otherwise be possible.

Another important part of the work consists in the direction of the peasant workers as to the needs of the American market and the methods of preparing work and sending it to the United States. In December, 1910, a collection of this work was shown at the annual exhibit of the National Arts and Crafts Society, New York. In October, 1911, a large exhibit was shown at the Art Institute, Chicago. Displays were also made at handicraft places in Minneapolis and Detroit.

This handicraft, particularly the Russian needlework and laces, can not be duplicated in America. Such handwork is possible only in a country where labor is cheap and necessities great. The American duty on this work is 60 per cent.

Lace making is a craft that has been known to the women of all classes and stations in Russia from time immemorial. The patterns have always been extremely varied. Under the influence of the trade with western Europe foreign samples were introduced, but this influence did not injure the production of typical Russian laces. The art of lace making was principally sustained by the country squires shops, where various designs of the highest value were produced, but now only a few organizations are left in certain Provinces (as, for instance, Moscow and Kaluga) in which the women are still making laces, using as patterns the designs left to them by the old lace makers.

An investigation of the lace industry indicates that the principal centers are in the Podolsky and Serpukhov districts of Moscow Province; Riazan, Skopin, and Mikhailovsky districts of Riazan Province; Novotorshky and Kalasinsky districts of Tver Province; cities of Romanov-Borisoglebsk and Rostoff, Yaroslav Province; Belevsky and Odoevsky districts of Tula Province; Eletsky and Mtsensky districts of Orel Province; Vologodsky and Kadnikovsky districts of the Vologda Province; city of Balakhna, Nizhni Novgorod Province; Laishevsky district of Kazan Province; and Jaransky district of Viatka Province. The lace-making industry differs from many others in that the value of the product does not depend upon the quality of the material, but principally on the artistic originality of the design, combined with fine workmanship.

Mr. A. V. Ielagen, of Ryazan, thus pictures the native cottage life as it affects the work of the peasant women:

> And what are the surroundings of these patient workers? An izba [cabin], 6 by 7 yards, with small windows; heat is by far too expensive during the long cold winter; benches around a clumsy stove. In such a hut often live 10 or 12 people, who are talking, scolding, crowding each other. No possibility for work. Only in the evening, when the husbands and babies are asleep, the younger women, with little girls of 6 and 7, gather around a table in the corner with a kerosene lamp in the middle and start on their beloved work. Until 2 or 3 o'clock the company is steadily working, and only after the moujiks have left the izba for early duties do the women hurriedly pack their frames in some safe corner, and throw themselves on the benches for a few hours' rest. Yet under such conditions most artistic work is produced.

GROWING SALE OF PEASANT-MADE GOODS IN AMERICA.

Besides the trade in laces Americans are becoming more and more interested in purchasing kustarny (handmade) goods from Russia. The work of the kustari (peasants) shows wonderful development in every section of the Empire. A chief feature is the production of beautiful and useful articles in wood. The furniture branch attracts the most attention. It is carried on principally in the Provinces of Moscow, Nizhi Novgorod, Viatka, and partly in Perm. There are villages where every peasant's home is a busy workshop for the production of furniture, some of which is purchased by leading furniture firms. More than one-half of the furniture in the stores of Moscow dealers is made by the kustari. The fashioning of sleigh runners and rims and spokes of wheels is much developed in the Volga Provinces—Kazan, Nizhni Novgorod, Simbirsk, Ufa, and others. The amount produced can be judged from the fact that at the recent Nizhni fair 100,000 rims and 500,000 wheel spokes were on exhibition.

In addition to the above, there are whole villages busy with the making of wooden toys (Selo Bogorodskoe, Vladimir Government); spools and bobbins (Village Lokotnia, Moscow Government); wooden dishes (Semenovsky district, Nizhni Novgorod Government); harmonium frames (Tula district produces about 200,000 yearly); pots of beech bark (about 100,000 produced yearly in the Verkhotur district, Perm Government); and different articles made of birch, such as sieves, etc. Kustari along the banks of the Volga and other streams build boats and prepare frames for houses that are sent down the rivers on boats for sale.

FLAX SPINNING—HANDMADE AGRICULTURAL IMPLEMENTS.

The flax spinning and weaving industry, which is one of the oldest and most developed of the village occupations, and which, like the woodworking industry, is supplied with raw material produced at home, is of great significance. About 375,000 tons of flax fiber are collected yearly in Russia. Of this quantity about 250,000 tons are exported; 125,000 tons are left for Russia, 80,000 tons being consumed by the mills, and the remaining 45,000 tons by the kustari. Thus the mills work up into yarn only 32,000 tons more fiber than the kustari do by hand in their villages.

The production of improved agricultural implements and machinery is a new kustarny industry. For some years the demand for agricultural machinery has increased among the peasants. This demand was most active in those sections where the zemstvos undertook the introduction of improved methods of farming, but the cost of the machines and implements was usually too great for a wide sale to the peasants. Certain zemstvos assisted the peasants in the purchase of machinery from their own stores on the installment plan, deferring payment for months and in some cases for two years. The peasants themselves found a way out of this dilemma; the kustari, under the influence of the demand on the part of their neighbors, began to manufacture plows, iron harrows, and winnowers at prices low enough to place them within the reach of the peasantry. In the district of Krasnoufimsk about 700 thrashers, 4,000 plows, and 6,000 to 7,000 scythes are turned out annually. The production of the Perm kustari amounts to 1,200 thrashers, 600 winnowers, and 24,000 plows yearly.

In the Province of Viatka the peasants have made agricultural implements for 40 years. The production of plows is strongly developed in the Province of Smolensk and in the Starobelsky district of Kharkof Province. Riazan Province has for a long time manufactured thrashers that are sold all over Russia. This industry is concentrated in the district of Saposchok, and the Saposchok kustari also produce yearly a large number of winnowers, straw cutters, etc.

FUR-DRESSING AND LEATHER INDUSTRIES.

The fur-dressing industry has been growing rapidly. In some Provinces—Olonetz, Viatka, Yaroslav, Vladimir, Nizhni Novgorod, Kazan, Kief, Poltava, Tchernigov, and Kursk—the trade has developed into rather large proportions, with many workmen employed

and considerable capital invested, but in general the kustarny fur-dressing industry does not occupy so important a position. Recently there were organized in the centers of the fur trade of Moscow and St. Petersburg a few establishments that have the character of factories and dress chiefly the best sorts of skins, although they handle also some of medium grade, but the principal furs of cheap quality are dressed by the kustari. This work is carried on in 33 Provinces. The business amounts to $10,000,000 a year and employs 40,000 workmen.

The leather industry is widely spread over Russia, but it is especially developed in the Provinces of Nizhni Novgorod, Viatka, Perm, Vologda, Novgorod, Kazan, Simbirsk, Saratov, Moscow, Tver, Kursk, Poltava, and Tchernigov, also in the Caucasus and Siberia. In these shops, which are very small, tanned goods are dressed and a very little fine leather is made. Of tanned goods, first place is occupied by oxen and cow skins, then come black and light colored Russian leather and sole leather. Notwithstanding unfavorable economic conditions, the kustarny leather industry is of some magnitude in Russia, as shown by the following figures: In 44 Provinces 21,000 workmen are engaged and their products yearly amount to $6,000,000; in 40 other Provinces 85,000 men are working, with an annual output of $13,000,000.

PROGRESSIVE WORK OF ARTELS.

Though the kustarny industry is developing, it needs assistance, and requests have been made for Government and zemstvo cooperation. In Perm Government this help has been rendered by establishing model workshops (of which there are about 35) managed by a council composed of representatives of the zemstvos and of the local population, which gives them a cooperative character. It has happened that workshops started by the zemstvos became independent and commenced working on their own account. Such was the case of the labor artel of the Sosnov kustarny shoemakers of the Shadrinski district. In 1911 this artel consisted of 16 members, 17 apprentices, and 2 women assistants; it now has its own works for preparing leather.

Another interesting artel is the "Trudovik," Shaitanski Volost, Ekaterinburg district, Perm Government, founded in 1909, with 12 members. This artel manufactures agricultural machinery and has rented two workshops. In 1909 it delivered to the Ekaterinburg Association of Savings Banks and Credit Companies 6 thrashers that were highly satisfactory. In 1910 the artel received an order for 40 thrashers from the same association, and for the same number of machines from zemstvos and private persons.

The chief artels in Perm Government are the Nizhni-Isetsk iron-manufacturing artel, the Dedyukin salt-works artel, and the Utkinsk sawmill artel. The Nizhni-Isetsk artel was formed by employees of the Government works, which ceased operations because of losses. There are 196 members, not including those occupied with auxiliary work. When starting operations the artel received from the Government the old building and machinery, valued at $120,000. At first the artel was aided by loans from the Perm Kustarny Bank, the Government zemstvos, the Curator for Supporting Labor, and from

private persons to the extent of $12,000. In 1911 the artel manufactured assorted iron, technical supplies, brick presses, etc., valued at $102,000. Some of the products are sold to local kustari through credit companies, while the presses, thrashers, etc., are sold in distant markets. The artel is now executing orders for the Perm and Tiumen-Omsk Railways.

SALT FACTORY—OTHER ARTELS.

The Dedyukin salt-factory artel started operations at the close of 1908, receiving from the Government the badly damaged buildings of the salt factories, where work had been stopped because of losses that had been experienced. The Perm Kustarny Bank, and later the Government, advanced loans to the artel to the amount of $20,000. The buildings were reconstructed. During 1911 the artel manufactured 1,500,000 poods (about 24,200 long tons) of salt of a very high quality.

Besides those in Perm Government there are kustarny artels in the Governments of Moscow, Kostroma, and Nizhni Novgorod. The Blagoviestchensk Raw Material Association, Kostroma Government, founded with the help of the zemstvo in 1910, purchases raw material for its members. The association rents premises for its stores, where the raw materials are stored, as well as articles manufactured by the kustari. These articles have to be deposited in the stores as security when members receive goods in excess of their credit. The manufactured articles are valued at the cost of the material used, in this case. A certain percentage is charged for the storing.

Some of the kustarny artels of Moscow Government are organized to purchase materials and sell goods manufactured therefrom. First among these organizations is the Viazma Association, founded by 36 peasants in 1909. It deals in timber, hardware, and articles of prime necessity. The association stores and sells baskets and other articles manufactured by the kustari. In Moscow there exists an organization, "Soiuz," to sell goods manufactured by artels and kustari.

PROPOSED ZEMSTVO KUSTARNY BANK.

The kustarny industry is developing more and more each year, and new spheres of activity are created for persons interested therein. Among many other means for encouraging this industry those measures having in view the development of cooperative associations among the kustari are considered most important. The supporters of the industry believe that only in this way can the weak side of the business—the absence of organization in regard to credit and in the sale of articles manufactured—be improved, and the efforts of the zemstvos are now directed toward this channel. The Moscow zemstvo especially has done much work of this nature. There are now 22 cooperative organizations of a kustarny character, representing 20 different crafts, but the membership is not large. The number of members in all the kustarny artels is 636; if the average number of persons in each family is estimated to be four, the number of kustari organized into one body by this association would amount to 2,544, which is only 5 per cent of the total number of kustari in Moscow

Government alone (there are about 15,000,000 kustari—peasants occupied with home work—in Russia), so there is plenty of work for the zemstvo in the future.

No one cooperative association, however great its means, will be able alone to organize the credit required for the kustarny industry and the sale of the articles manufactured. This condition is well known to the Moscow zemstvo, which has been financing kustarny cooperative associations from the moment it first began to work for the industry, trying at the same time to find new markets for and to develop the sale of the articles manufactured. With the establishment of artels and cooperative organizations the method of financing has to be changed. Formerly small loans were made to individuals or families for a short term, but now artels have to be financed. As loans of larger sums for longer periods now prevail, it was decided to establish a special fund to be loaned for long periods solely to kustarny cooperative organizations. This idea originated with the honorary curator of the Moscow Kustarny Museum, who, in 1910, furnished the initial capital for this purpose through the gift of $50,000. At present hardly anything remains of this fund, and the honorary curator has communicated a new plan—the establishment of a zemstvo kustarny bank specially organized for the wants of the kustarny industry. The Kustarny Council has the matter under consideration.

AGRICULTURAL AND PASTORAL DEVELOPMENT.

The preponderating importance of agriculture in Russia is indicated by the fact that of the exports in 1912, amounting to $734,000,000 in value, more than $550,000,000 represented agricultural products, live stock, and dairy products. Grain is the principal agricultural product, and the largest crop produced, especially in the central and northern parts of Russia, is rye. Winter rye is the common variety, spring rye being grown only in the more northern parts of European Russia, although in Siberia it is raised almost exclusively. South of the rye region wheat is the chief grain, being the dominant crop in Little Russia and the southwestern governments. Winter wheat is grown principally in the Governments of Kief, Podolia, and Volhynia, and spring wheat in the Governments of Samara, Astrakhan, Orenburg, and Ufa, on the southeast. Both wheat and rye are grown in the Baltic and Polish Provinces. Oats are grown as a spring crop wherever winter rye is raised. A large part of the farm lands in the Government of Archangel, in northern European Russia, is devoted to barley, and this crop is also extensively grown in the southern Governments of Kherson, Taurida, and Bessarabia. The Caucasus and the southwestern Governments of Bessarabia, Podolia, and Kherson produce most of the Indian corn raised in Russia. Two or three years ago the zemstvo of Bessarabia secured the services of an American agricultural expert, who has since been active in instructing the farmers of that Province in corn culture.

The relation of the grain exports to the total production in Russia in each of the last five years is shown by the following table, in thousands of short tons:

Years.	Wheat.		Rye.		Barley.		Oats.		Corn.	
	Net crop.	Exports.	Net crop.	Exports.	Net crop.	Exports.	Net crop.	Exports.	Net crop.	Exports.
1907-8	10,332	1,674	17,280	720	6,930	2,538	9,954	450	1,368	702
1908-9	11,898	3,456	17,010	450	7,416	3,744	10,530	990	1,656	702
1909-10	19,414	7,038	20,250	648	9,738	4,140	13,914	1,494	1,062	522
1910-11	17,766	6,246	19,350	1,224	9,324	4,932	12,204	1,728	2,106	1,350
1911-12	10,134	2,484	16,434	432	8,118	3,132	9,458	846	2,232	1,008

ADOPTION OF MODERN FARMING METHODS.

An indication of the gradual adoption of more modern agricultural methods is given by the steady increase in the area sown to grass in the Governments of Kostroma, Pskov, Vologda, Perm, and elsewhere. The area devoted to grass in the northeastern district in

1911 was 31 per cent in excess of that in 1900. In the lake district there was a gain of 26 per cent and in the northwestern region of 35 per cent. In some regions the production of hay and grass seed for the market has become a distinct industry, and the local zemstvos in the Perm Government report that the average peasant's budget has been increased by 10 to 15 rubles ($5.15 to $7.73) by the sale of grass seed. In the southwest the cultivation of grass for seed is beginning to compete with grain raising, and the exports of grass seed from European Russia have increased from $10,712,000 in 1906 to $24,503,185 in 1912.

The increase in the distilling industry, principally in the southwest, has led to more extensive cultivation of potatoes and corn, and the deep plowing necessary for these crops has had a beneficial effect on general farming. According to the data gathered by the Kherson zemstvo, a dessiatine (2.7 acres) of land cultivated under a modern system of crop rotation, including corn, yields a gross income of $51.50, while the Crown land rented by the peasants and cultivated under the usual 3-field system gives only $20 to $26.

The extension of the cultivation of cotton and sugar beets in the sections where these plants can be profitably raised also indicates increasing returns to the farmers for the labor expended. The average beet crop has increased from 7,560,000 tons during the period 1901–1905 to 14,526,000 tons during the period 1906–1911. The growing use of chemical fertilizers is another proof of the adoption of modern methods. In 1908 the total production of fertilizers in Russia amounted to 234,000 short tons, and the imports to 135,000 short tons. In 1912 the production was 540,000 short tons, and the import 466,000 short tons. The use of credit has also shown great development recently, the loans made during 1911 amounting to $618,000, while in the period 1904–1908 the annual average was $156,560. Of these loans, 72 per cent were granted to small farmers. It is seen, therefore, that, while the area devoted to grain has been enlarged, Russian agriculturists are endeavoring to introduce more intense culture of other products.

AGRICULTURAL SITUATION EARLY IN 1912.

The crop failure of 1911, extending over a vast territory embracing the fertile Provinces about the Volga River and in western Siberia, together with a severe and protracted winter and a cold late spring, made the position of the Russian farmers difficult during the first half of 1912, the time of year when there is the least demand for laborers, and the small farmers had to sell a considerable part of their holdings. When work in the fields commenced many farmers had not sufficient machinery, implements, and horses, and could not secure laborers, which necessitated a slight reduction in the area of land leased and sown. There was, moreover, a shortage of seed in the section of crop failure. The greatest losses occurred in cattle breeding, the loss in some districts west of the Volga amounting to 22 to 38 per cent.

Conditions changed in the spring, the favorable outlook for the grain and hay crops, together with the small supply of cattle and agricultural products, caused prices to rise, with a ready market. This operated to compensate the small farmers for their winter losses,

while a rise of 15 to 20 per cent in the wages of laborers for spring work proved favorable to the inhabitants of the affected districts, who also received assistance from the Government institutions, the zemstvos, and private societies.

WESTERN AND SOUTHWESTERN PROVINCES PROSPER.

In the Provinces which were not affected by crop failures in 1911 conditions were different and showed the trend toward the intensification of agriculture which began five years ago. Especially in the west and southwest the employment of mineral fertilizer, cultivators, potato planters, combination drills, and other agricultural machinery increased. The acreage devoted to beets, potatoes, and meadow grasses has been increased, and Russia now produces a larger amount of beets and potatoes than France and Germany combined.

The second half of the year did not fulfill the general expectations, but the rye crop proved a record one and the other crops were above the average. It was only in some parts of the southeast section that crops proved unsatisfactory. Heavy rainfall in August and September prevented the sowing of winter grain and the gathering of vegetables, and subsequent frosts destroyed a considerable part of the latter. A thaw in October and November permitted the digging of beets and potatoes, but half to three-fourths of those crops were ruined. Garnering of the winter cereals progressed favorably on the whole, the entire crop being brought in by September 1.

Conditions were less favorable for the summer grain; the crop was not ripe for cutting until September in some sections, and the frequent rains greatly impeded and delayed the harvesting and had a disastrous influence on the quality of the crop. An exception was presented by the Volga, Ural, and some of the northern Provinces where dry weather prevailed, but in these sections the high winds and storms impeded work.

Generally speaking, Russia does not experience any serious disasters from insect pests, though the injuries to the crops last year gave the Agricultural Department much concern. About the 1st of September, in many of the central agricultural districts, it was found that the early sprouts of the winter cereals had suffered from insects to such a degree that some areas were resown. A more serious injury was experienced from various parasitic fungi, as ergot, etc. In the principal vine-growing sections the plants suffered from mildew.

CEREALS.

The preliminary report of the production of the five principal cereals in 1912 gives the following returns for 63 Provinces of eastern Russia, as compared with the final reports of production in 1911, and with the average for the last five years:

Cereal.	5-year average.	1911	1912
	Bushels.	*Bushels.*	*Bushels.*
Rye	791,807,143	735,942,857	984,150,000
Winter wheat	189,660,000	188,160,000	236,460,000
Spring wheat	365,340,000	257,460,000	402,420,000
Barley	406,950,000	399,975,000	466,200,000
Oats	893,925,000	790,425,000	978,412,500

ACREAGE PLANTED.

Later final figures relating to the area planted and the crop of winter wheat, rye, barley, and hay have been published by the Central Statistical Committee. The area of land sown to wheat and rye in 87 Provinces and Territories of the Empire was 92,251,000 acres, or 36.7 per cent of the area devoted to grains of all kinds, and an increase of 804,961 acres over the area planted in 1911. In the central region, winter wheat and rye accounted for 85 per cent of the area planted to food grains; in Poland, for 81.9 per cent; in the lake region, for 81.8 per cent; and in the middle Volga region, for 75.9 per cent. Eastern Siberia, with 17 per cent, the south steppe region, with 21 per cent, and western Siberia, with 1 per cent, showed the smallest plantings of winter grain. Out of 18 districts, 11 showed increases in the area sown to winter grain, as compared with the average for 1907–1911.

The area sown to winter rye in the 87 Governments and Provinces was 71,977,906 acres and that sown to winter wheat was 20,275,251 acres. The total yield was 1,030,026,393 bushels of rye and 277,832,800 bushels of wheat. These figures were, respectively, 222,300,643 bushels and 57,410,833 bushels above those of 1911. The winter wheat crop was most abundant in the following districts: Beyond the Dnieper, 81,600,000 bushels; north of the Caucasus Mountains, 85,200,000 bushels; southern steppes, 27,600,000 bushels. The largest rye crops were obtained in the following districts: Middle Volga, 165,857,143 bushels; Dnieper-Don, 156,214,285 bushels. The average yield per dessiatine (2.7 acres) was 38 bushels for rye and 37 bushels for wheat and barley. The Baltic district showed the highest yield per dessiatine for rye and wheat—51 and 54 bushels, respectively. The highest barley yield was 58 bushels per dessiatine, which was obtained in the district beyond the Volga. The straw obtained from the winter grains amounted to 55,479,804 short tons.

The oat crop developed badly in the southeastern section of Russia and in some districts of the Provinces of Orenburg, Simbirsk, Saratov, Taurida, and Vladimir, and the crop was below the average in Vitebsk, Pskov, and Olonetz. In the remainder of European Russia it was satisfactory. The total crop of winter oats was 22,271,500 bushels and the area sown in 1912 was 1,072,551 acres.

GRAIN STOCKS, IMPORTS, EXPORTS, AND PRICES.

The supply of the chief cereal products on hand on January 1, 1913, as compared with the stocks held on the same date in 1912 is shown by the following table:

Grain.	1912	1913
	Bushels.	*Bushels.*
Wheat	26,225,220	15,599,820
Rye	8,826,686	5,302,543
Oats	16,412,850	15,247,462
Barley	7,520,175	9,539,175
Corn	538,007	777,857
Flour, wheat and rye	540,408,400	298,316,000

The exports and imports of grain during 1911 and 1912 are shown by the following table:

Grains.	Imports.		Exports.	
	1911	1912	1911	1912
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*
Wheat	940,800	390,000	144,291,600	96,565,200
Rye	4,455,071	3,445,714	36,061,214	19,668,214
Barley	125,000	112,500	196,650,000	126,207,750
Oats	495,875	724,500	95,691,375	58,201,878

The average prices of wheat throughout the Empire were higher in 1912 than in 1910 or 1911. In Odessa winter red wheat sold for $1.72 per 100 pounds, as against $1.57 in 1911 and $1.58 in 1910. From July to December the average price of winter wheat at Odessa was $1.64 per 100 pounds, while during the first half of the year it averaged $1.80. The exports from January to June totaled only 1,000,200 short tons, while in the last half of the year they aggregated 1,890,000 short tons. The average export price, according to the Russian statistics, was $1.70 per 100 pounds, as against $1.57 in 1911.

The average export price of rye was $1.36 per 100 pounds, against $1.14 in 1911; that of barley, $1.30, against $1.16 for 1911; oats, $1.44, as compared with $1.22 in 1911; and corn, $1.16, as against $1 in 1911.

FLOUR TRADE.

In its general features the Russian flour market in 1912 showed a marked difference from the preceding year. Its operations were quieter and steadier, and while 1912, like 1911, can not be considered as a successful year for the trade, prices did not vary as much and the year is considered as more favorable than its predecessor. The unsatisfactory crop in the eastern part of European Russia in 1911, which was the principal cause of the fluctuations in that year, still exercised some influence on the 1912 situation, but this influence gradually diminished during the first half of the year and a certain equilibrium was reestablished, chiefly in consequence of the supplies of flour that had accumulated at the principal supplying and distributing points.

The high prices of the last half of 1911 declined somewhat toward the end of that year, but showed a tendency to rise again during the first months of 1912. This was partly the result of a further increase in grain prices, and partly due to a more lively demand before Easter. The accumulated supplies at the principal centers exercised some pressure on prices, so that no rise was caused by the increasing sales at the opening of navigation. The Volga flour industry regained the markets that it had lost temporarily in consequence of the small crop of 1911. Sales were lively on the central Volga markets, whence the flour was shipped by the Mariinsky Canal system to St. Petersburg and other northern cities. Railway shipments were made to the central and manufacturing regions, but there sharp competition was offered by the flour producers of the southern and south western districts, who had considerably extended their sales during the previous autumn and continued a successful business in the spring.

Partly on account of the high price of grain, the flour output did not keep pace with the sales, and there was a marked decrease in the supplies at the principal centers, which reached their lowest limits in September. The high price of grain and the relatively low price of flour compelled many flour producers to reduce their output and some stopped altogether, after a short active period in the spring, until the 1912 crop appeared on the market. In the central and southern districts this period of inactivity was prolonged by the lateness of the harvest. No such delay was experienced in the central and northeast Volga districts, but the supplies at the principal markets increased slowly, as the flour produced was immediately sold for local consumption and for shipment along the Volga to Trans-Caucasia and central Asia. Flour prices fell as a result of the decrease in grain prices.

CONDITIONS IN SOUTHERN RUSSIA—FLOUR EXPORTS.

The flour producers of the southern and southwestern districts had to work under unfavorable conditions. As a result of the rainy weather during the harvesting period, there was a scarcity of grain suitable for grinding, and the millers had to fall back on the stocks of the preceding year, and later on the supplies stored at the ports. The last-named markets were in a position to sell on account of the small foreign demand.

Sales were active at the distributing ports on the upper Volga before the close of navigation, and the inconsiderable supplies on hand when the river was closed by early frosts resulted in rising prices. These were strengthened during the last months of the year by the big demand for flour on the part of the northern cities.

In general, the flour situation during the second half of 1912 was of even character, the production corresponding to the sales, with a marked reduction of prices, due chiefly to the decreased prices of grain in the autumn.

The export trade in flour during the past year was not very satisfactory. The exports of Russian flour, always limited, suffered considerable reduction, partly on account of the high prices prevailing in the interior markets, and partly from the unfavorable export conditions, high sea freights, etc., which resulted from the Balkan war. The exports to Finland, principally of rye flour, decreased as a result of a superior crop in Finland itself and increased competition with German flour. A marked increase in the exportation of bran was noted, especially during the first half of the year, in consequence of a considerable German demand, because of the unsatisfactory crop of forage in that country in 1911.

POTATOES.

Continuous rain in the latter part of September, when potato digging was begun, was a great obstacle to the gathering of that crop, and early frosts caused many farmers to abandon their fields. The entire crop was estimated at 25 to 30 per cent below that of 1911, which was itself 12 per cent below the 1,339,072,200-bushel crop of 1910. As a result of this shortage, the price of potatoes, which has usually been between 18½ and 20 cents a bushel, rose to 29 to 33 cents. In some districts the scarcity of potatoes is so great that distilleries have found

it impossible to secure the necessary quantity for distillation, and have turned to corn as a raw material. No potatoes are sold by the larger estates, as the owners contemplate using their stocks for distilling. Starch factories are without supplies and have been compelled to stop manufacturing for the season. The Russian exports and imports of potatoes during the past four years have been as follows.

Years	Exports	Imports.
	Bushels.	*Bushels.*
1909	4,070,400	75,600
1910	5,275,200	65,400
1911	11,062,200	57,600
1912	9,087,600	68,400

Poland has the largest area devoted to potato culture, 2,498,488 acres, or 18.1 per cent of the land plowed. Then come Lithuania, 770,534 acres (10.5 per cent of the land plowed); White Russia, 1,121,829 acres (10.3 per cent); the central industrial region, 810,682 acres (7.5 per cent); the lake Provinces, 261,667 acres (6.2 per cent); and the Baltic Provinces, 323,103 acres (or 9.6 per cent of the land plowed). In the other parts of Russia the area devoted to potatoes is from 1 to 5 per cent of the land plowed. From 1901 to 1910 the average crop per acre was 144 to 149 bushels in Esthonia, 125 to 141 bushels in Radom, 112 to 121 in St. Petersburg, 116 to 141 in Kursk, and 120 to 131 in Kief. The lowest yields per acre were in the Governments of Olonetz, Orenburg, and Kherson, running from 50 to 78 bushels per acre.

The Ministry of Agriculture has made the following estimate of the cost of production of potatoes, which brings the cost per bushel to 9 to 17 cents:

Expenses.	Landed estate owners.	Peasants.
Fertilizers	$8.25	$6.69
Carting manure to the land	3.77	3.05
Potatoes for planting	4.73	3.94
Indirect expenses	1.24	.62
Rent of land	3.21	3.21
Total	21.20	17.51

The average prices of potatoes during the last 10 years were 12 to 25 cents per bushel.

PRODUCTION OF ALCOHOL FROM POTATOES.

Nearly all the alcohol produced in Russia is employed in the manufacture of intoxicants. One of the principal impediments in the way of its wider use in the industries and for lighting and cooking appliances is the high price charged for pure alcohol, caused by a very heavy excise duty. Because of the need of grain for food Russian alcohol is now derived almost wholly from potatoes. The greater part of the potatoes for distilleries is bought up by them from neighboring farmers, although many have plantations of their own where

they introduce various improvements intended to give larger crops of tubers richer in starch. These experiments are often copied by the farmers, much to their benefit.

The following table gives the principal Provinces growing potatoes for industrial purposes, the acreage planted during 1912, and the yield in short tons:

Provinces.	Acres.	Tons.	Provinces.	Acres.	Tons.
Esthonia	29,700	120,870	Penza	32,400	127,656
Grodno	29,700	141,984	Piotrkow	10,800	75,042
Kalisz	16,200	89,226	Poltava	13,500	74,286
Kharkof	18,900	(1)	Saratov	10,800	(1)
Kief	21,600	90,090	Tambov	32,400	144,252
Livonia	13,500	67,446	Tchernigov	27,000	115,038
Lublin	18,900	114,246	Tula	27,000	85,698
Minsk	48,600	204,732	Vilna	18,900	80,334
Mohilev	29,700	(1)	Warsaw	21,600	141,138
Orel	16,200	(1)			

[1] Returns not yet received.

The total area under potatoes planted for industrial use increased by only 4,347 acres. The percentage of starch varied from a little over 11 per cent to 26 per cent and averaged nearly 18 per cent.

Compared to the amount of potatoes grown, the part used for the distillation of spirits is small, although potatoes are the material most extensively used for this purpose. From 1906 to 1910 the potato crop in 72 Governments averaged 1,119,600,000 bushels, of which an average of 105,000,000 bushels were used by the distilleries.

SUGAR.

In the 40 years that have elapsed since the erection of the first sugar refinery in the Tula Government, the production of beet sugar has risen to a place of prime importance in Russia. There are four great beet-producing areas; the southwestern region, with 1,019,700 acres devoted to beet raising in 1912; the central district, with 564,500 acres; the eastern section, with 95,800 acres; and the Vistula Provinces, with 203,600 acres. The production of soft sugar is also concentrated in these districts. Of the 282 works producing soft sugar only or together with loaf sugar in 1911–12, 145 were in the southwest, 72 in the central or trans-Dnieper region, 19 in the Vistula Provinces, and 16 in the eastern Provinces.

The growth of the industry in the past 15 years is shown by the following table:

Years.	Area under cultivation.	Output of soft sugar.	Refineries.	Output of loaf sugar.
	Acres.	*Short tons.*		*Short tons.*
1895–96	858,500	700,800	(1)	(1)
1907–8	1,511,600	1,376,500	65	724,300
1908–9	1,346,100	1,238,400	67	775,700
1909–10	1,348,200	1,119,200	64	907,100
1910–11	1,631,100	2,102,000	[illegible]	915,372
1911–12	1,923,000	2,019,500	(1)	(1)
1912–13	(1)	1,951,700	(1)	(1)

[1] No data.

SMALL OUTPUT PER ACRE.

While Russia has the largest acreage and total production of beet root of any country, the output of beet root per acre is comparatively small, both on account of the less favorable conditions of soil and climate, as compared with western Europe, and the undeveloped state of agricultural technique, especially among the peasant farmers. In the campaign of 1911–12 the average output per acre was 7.7 short tons. The area devoted to beet culture, the amount of beet root treated, and the average crop of beet root per acre in other European countries in 1911–12 were as follows:

Countries.	Crop area.	Beet root treated.	Beet-root output per acre.
	Acres.	*Short tons.*	*Short tons.*
Germany	1,227,800	9,885,600	8.05
Austria-Hungary	981,600	8,629,200	8.79
France	556,900	4,554,000	8.18
Belgium	150,400	1,769,400	11.78
Italy	148,200	1,537,200	10.54
Netherlands	137,700	1,888,200	13.71
Sweden	67,500	903,600	13.38
Denmark	59,400	819,000	13.79
Spain	49,400	876,400	17.77

The problem of increasing the output of beet root per acre has received much attention and the sugar bakers are doing much to improve beet culture. A series of experimental fields have been established; well-equipped laboratories are provided for the study of both the beet and its products and the fertilizers necessary for its production; beet seeds are distributed to farmers; an entomological station has been established to find methods of fighting injurious insects, etc.

REGULATION OF DOMESTIC SALES.

The relations between sugar producers and consumers are regulated by a special law, which governs the amount of sugar sold on the domestic market. The amount of sugar required for the home market in each sugar campaign is fixed by the Council of Ministers, and a certain proportion of this total allotted to each sugar manufacturer. This total is known as the "home contingent" and pays the ordinary excise tax of 1.75 rubles per pood (about 2.5 cents per pound). The Council of Ministers also determines the amount of the fixed or "inviolable" reserve, which must be kept intact at the factories unless the price on the Kief market rises above the maximum fixed by the Government. In the event of its being placed on the home market any sugar in excess of the home contingent pays a further surtax of 3.5 rubles per pood (about 5 cents per pound).

The remainder of the surplus, above the inviolable reserve, forms the "free reserve," which can be placed on the internal market as shown above, after payment of the excise and surtax, may be carried over by the producer to the next season, or may be exported free of excise or surtax. In view of the large surplus which can not be sold at home, Russia has become an important source of sugar supply for the rest of Europe.

Russia signed the Brussels Sugar Convention in 1907, agreeing to limit its exports for the following six years to 1,000,000 tons, exporting not to exceed 300,000 tons per annum during the first two years and 200,000 tons per annum in each of the four succeeding years. The general failure of the beet crop in other countries in the summer of 1911, with the resulting great rise in prices, led Russia to apply for permission to export an extra 500,000 tons. The other members of the convention did not agree to this, however, and the agreement drawn up in March, 1912, extending Russia's adherence to the convention until 1918 left the annual export contingent of Russia at 200,000 tons, with permission to export an additional 250,000 tons spread over a period of three years.

SUGAR PRODUCTION IN 1912.

The manufacture of granulated sugar has trebled in Russia since 1895, owing to increased consumption on the interior market. In 1909–10 the industry was in a weak condition. Prices rose on the interior market to such an extent that the importation of foreign sugar was permitted, but immediately thereafter the Russian industry entered on a period of unprecedented development. The area planted to beets was increased to 1,922,000 acres in 1912, and the output of sugar during the season of 1911–12 amounted to 2,019,600 tons. The season beginning September 1, 1912, also gave favorable promise, but early frost delayed the digging of a large part of the crop until November, when it could not be transported to the factories on account of the condition of the roads.

In November it was ascertained that the 1,314,000 tons of sugar which the Council of Ministers had decided would be required for the interior trade was insufficient, and the Minister of Finance permitted 36,000 tons to be placed on the market from the storehouses. In 1907 the interior market required 1,044,000 tons of sugar; in 1911, 1,350,000 tons. The satisfactory harvests of the past few years have made it possible to meet the demands of the home market and to export sugar to Finland, Persia, and western Europe. Last year sugar was scarce in the western European markets, and the amount of sugar exported from Russia under the Brussels Convention was increased. This condition was profitable to the Russian dealers, as prices were high.

The average price of sugar at Odessa in 1912 was $2.99 per 100 pounds, as against $2.94 in the preceding year. The exports of sugar to Finland and the conventional markets during the first six months of the year totaled 201,888 short tons, while in the corresponding period of 1911 they had aggregated only 133,128 tons. The second half of the year showed a decrease, however, dropping to 107,100 short tons, as against 278,190 tons in the last six months of 1911.

TOBACCO.

The principal Russian center of tobacco growing is in Little Russia, embracing the Provinces of Tchernigov, Poltava, and Voronezh, although only inferior qualities, known as Mahorka, Bakum, etc., are grown there. Next come the Caucasus, Taurida, and Bess-

arabia, where higher qualities are produced, classed and known as Turkish. The Province of Samara, on the Volga, produces Mahorka and leaf tobacco which is used in the manufacture of cheap cigars. The Provinces of Tambov and Riazan produce low grades of tobacco in considerable quantities. Tobacco is also grown in other parts of Russia, but not in commercial quantities or of any remarkable quality.

Tobacco has recently been grown in increasing quantities and gradually improving qualities in various parts of Asiatic Russia, but data appertaining thereto are not at hand. All that is known is that along the River Irtysh there have been found many places particularly suited for the cultivation of tobacco. Common tobaccos were grown there at first, selling for about 60 cents per hundredweight, but a better grade is now being produced which brings six or seven times that price.

Tobacco growing is mainly in the hands of small planters, and generally on such a scale as to be a mere subsidiary industry of the farm. Taken all around, the average size of the area planted on a farm scarcely exceeds a quarter of an acre. Thus in most places the culture of tobacco is more of a casual nature tried on a small scale, to be gradually increased if successful, or abandoned if otherwise. Hence wide fluctuations result, both in acreage and in the number of "plantations," the latter being estimated at 500,000. The area of land under tobacco in 1911 was estimated at 125,000 acres, and the total yield of tobacco at 80,000 tons. A little over a quarter of this quantity was of the finer Turkish and American varieties. The Province of Tchernigov alone has over a quarter of the total of the tobacco area and produces nearly one-third of the total yield. In the Province of Tambov fully three-fourths of a ton of very common tobacco is realized per acre, while in some parts of Bessarabia barely one-fifth of a ton is obtained of the finer grades. It is not uncommon to find for some particular locality that the quantity of one year's harvest compares with that of another year in the ratio of one to four or even five. Presumably far more than one-half of the total quantity of tobacco is grown on land which belongs to the cultivators themselves, who are small farmers. In most parts the ground is selected near dwellings or farm buildings, where the soil always gets most manure. Exceptions to this rule are to be found in the Caucasus, Bessarabia, and, in particular, in the Crimea. Here tobacco is most often grown on rented land, the annual rent for favorable sites averaging from $10 to $20 per acre, and often, in specially suited locations, even $100 per acre.

PRICES AND TRADE METHODS.

The wholesale price in such places, realized by the grower of the finer varieties, is from $20 to $45 per ton of 2,000 pounds. The total cost of farming an acre in such sites in the Crimea, where labor is dear, is from $60 to $100, and in good years the cultivator realizes fully $200 to $250 net per acre. Under such conditions it would be expected that the industry would increase, but such is not the case. The following are some of the reasons given for this nonincrease: (1) Almost no exports, barely 3,000 tons yearly of the commonest

kinds; (2) want of trade organization to insure the producer more or less fixed profits; (3) excise formalities, etc.

For the foregoing and other reasons tobacco cultivation is considered a risky undertaking, the bulk of the profits remaining in the hands of the middleman, who, it appears, monopolizes the secrets of the manipulation of the tobacco trade and keeps the actual producer in a state of ignorance and helplessness. It may not be remarkable that the tobacco producers of small means do not try to break away from the middleman, but it is surprising that the wealthy and strong tobacco cutters and cigarette and cigar manufacturers do not put themselves into direct communication with the raw-material producers and thus shut out the middleman. The reason given for the continuance of the system is that dealing with the growers direct, who bring but small quantities, which lack uniformity, into the market, the factory owner finds great difficulty in arriving at a fixed price for a well-defined variety of properly sorted tobacco.

The tobacco planters are mostly poor peasants, and are entirely in the hands of speculative buyers, who buy when the peasant is in need of money, and thus deprive him of his profit. As a result, they live from hand to mouth and learn nothing from experience, although experts have been obtained from other tobacco-growing countries to give instructions as to the proper methods of cultivation.

GRADES OF TOBACCO—USES—GROWTH IN SIBERIA.

There is a great field for the production of fair medium tobacco in Russia, and the further development seems dependent on the proper regulation of the trade, as Europe produces barely one-half of the tobacco that it consumes. Russian tobaccos compare favorably with the cheaper varieties of leaf and cigarette tobaccos grown in the United States. The small amount that is exported is packed in large bales and shipped to near-by countries.

The time of planting depends entirely on the variety of tobacco, the location, nature of the soil, and the amount of water available. With most varieties and in most localities the tobacco is not allowed to run to seed. The leaves of the best grades are picked as they ripen, and air dried, but are packed for sale while still moist enough to remain pliable. As a rule, the finer varieties are light and mild, with small leaves, while the leaves of the commoner kinds, used by the peasants for their pipes, are large, dark, and strong. Tobacco production costs from $0.40 to $2 or $3 per hundredweight, and under favorable circumstances as much more can be realized as profit. The trade being in the hands of middlemen, there are no chief market centers. The total area under cultivation produces an average of one-fifth to three-fourths of a ton per acre. The Russian Government apparently does not take much interest in tobacco growing, aside from the collection of excise duties.

Tobacco is chiefly consumed in the form of cigarettes. Most of that used in manufacturing cigars is native grown, but the best cigars and the wrappers of the poorer grades are imported, chiefly from the United States and Cuba.

In Siberia tobacco culture is carried on principally in the territories inhabited by the Siberian Cossacks, along the Irtish River and the Altai Mountains. In 1911 the area under cultivation was

983 acres, and the crop was estimated at an average of 800 pounds per acre. The plantations are all of small size, and the work is done chiefly by the women. It is estimated that there are 7,000 persons engaged in the industry. Approximately 30 per cent of the tobacco produced is consumed locally, while the remainder is sold at the near-by fairs and in the city of Omsk.

The following table shows the number of tobacco plantations, their area, and the output in 1910 for the different sections of the Russian Empire:

Districts.	Plantations.	Area.	Crop.
		Acres.	*Pounds.*
European Russia:			
Central agricultural	37,014	19,742	47,465,075
Middle Volga	2,066	416	1,339,975
South Russia	11,312	19,454	20,048,888
Lower Volga	8,023	2,500	2,671,300
Southwest	79,673	1,801	1,353,435
Little Russia	114,032	53,883	51,604,758
White Russia	18	5	11,808
Lithuania	6,417	62	51,966
Poland	13	5	1,119
Caucasus	27,478	79,611	67,357,522
Siberia	21,185	2,819	2,938,282
Turkestan	7	186	160,413
Total	307,238	180,484	195,004,541

LICENSES FOR MANUFACTURE OR SALE OF TOBACCO BY FOREIGNERS.

The tobacco trade in Russia is open to foreigners, but special licenses are required to manufacture or deal in tobacco, in addition to the trade certificates required for any business establishment. Application for licenses to establish tobacco factories must be addressed to the excise authorities, accompanied by detailed descriptions of the proposed factories. The licenses are issued during November or December for the entire succeeding year. If a license is taken out before July 1, the full fee for the entire year is charged. If taken out after that date, the charge is only for six months. No establishment may be opened nor any business commenced until the license has been obtained.

COTTON.

Cotton is Russia's principal import, amounting to a value of about $50,000,000 per annum, and great efforts have been made both by the Government and by private enterprises to develop a source of supply of this important raw material within the boundaries of the Empire sufficient to supply the demands of the home industry. The areas at present devoted to cotton cultivation are all in Transcaucasia, between the Black and Caspian Seas, and in Central Asia. The latter region is the more important, supplying nearly the entire Russian crop, and comprises the region between the northern boundaries of Persia and Afghanistan and about the forty-third parallel of north latitude, excluding the mountainous parts.

The cotton is grown on the plains, where irrigation is possible. The climate in the Asiatic cotton belt is dry and continental, with high summer temperatures, mild winters, and scarcely any rainfall during the crop-making months. The annual precipitation averages

7.6 inches in the Ferghana Valley, 6.1 inches in Syr Daria, and 16.6 inches in Samarkand. During June, July, and August the thermometer averages 124° F., and in the autumn it ranges around 90° F., although frosts sometimes injure the ungathered crops in September. The climatic changes are extreme, and the rains can not be depended on. Water is obtained from a number of rivers, among which the Syr Daria, Amu Daria, Serafshan, and Murgab are the most important, and partly from glacial streams originating in the mountains.

COTTON GROWING IN CENTRAL ASIA.

The inhabitants of the Asiatic cotton region are a conglomerate of all the races and nations that inhabited that region in past ages, and speak various dialects of the Tartar-Sart-Bokhara language, except in the southwestern part, where the influence of the Persian language is felt. They are skilled laborers in the field, especially the Sarts of Ferghana, and seem to have naturally acquired special talent for farming. The field work is done chiefly by the farmer and his family, sometimes with the aid of hired help who live with the family and receive very small wages. When the help supplies its own food and lodging, wages during the planting, chopping, and picking seasons may run up to 40 to 52 cents per day. During the crop season there is generally an influx of Chinese laborers from Kashgar. Everything is done by hand; picks, hoes, and sometimes primitive wooden plows, are used for breaking the earth, and artificial fertilizers are little known. The average cost to the planter for cultivation, picking, and marketing his cotton is $1 per pood (36 pounds). The cost of transportation, together with incidental expenses, makes the added cost of placing the cotton at Moscow or other Russian textile centers about $1.10 per pood. The prices paid by buyers vary with the condition of the American and European market, but are kept at a high level by the high import duty on raw cotton, which amounts to 5.7 cents per pound upon imports from all countries except Persia. The duty on Persian cotton is 0.57 cent per pound.

Most of the cotton is sold to the mills in the Moscow and Lodz districts, although some goes to St. Petersburg. These firms generally buy seed cotton, which is ginned and baled at ginneries owned or rented by them. Grading is done on a different system from that employed in the United States, sorts being determined by color, and classes by cleanliness. Asiatic cotton is exceedingly dirty, as the winds carry dust into the bolls, completely filling the fiber. When ready for the market, about 15 per cent of the bale is dirt and other débris.

The modern history of cotton culture in Central Asia begins with Russia's conquest of that region, when trials were made with imported seed, chiefly American. Sea-island seed was tried at first, but would not thrive in the dry continental climate. In the early 80's new trials were made with American upland seed, which at once produced good results.

The chief cotton-producing section of the Empire is the Ferghana Valley, the 1912-13 shipments from which, including linter and "old" cotton, are estimated at 306,952,000 pounds, out of a total of 484,803,600 pounds for all of Central Asia. In 1910, 808,000 acres out of 1,023,800 acres devoted to cotton culture in Central Asia were

in this valley. The Ferghana is an oblong valley, closed in on all sides by mountains, which only at the western end leave a small passage connecting it with the rest of the Central Asian plain.

The other cotton-producing sections in Central Asia, with their cotton acreage and crop in 1910, are as follows: Syr Daria, 79,000 acres, crop 47,000,000 pounds; Samarkand, 60,000 acres, crop 33,586,000 pounds; Transcaspia, 76,518 acres, 93,204,000 pounds. The present output of this region is best judged by the shipments from the transportation centers, which for 1912–13 are estimated as follows, excluding the shipments for the Ferghana Valley: Tashkend, 28,889,600 pounds; Samarkand, 27,986,800 pounds; Bokhara district, 72,224,000 pounds; Transcaspian district, including cotton from Persia and Khiva, 43,334,000 pounds; from the Khiva district, via Tashkend, 5,416,800 pounds.

IN THE CAUCASUS.

Cotton growing in Transcaucasia is not a new industry, as the plant was successfully cultivated many years ago in the Government of Erivan. The plants then raised were of inferior quality, however, and the fiber had only a local market. This condition continued until the late eighties, when a series of good cereal harvests in Erivan drove the price of grain so low that its culture became unprofitable. Agriculturists sought more remunerative employment, and efforts were made to develop cotton growing. The industry gradually spread into the Governments of Elizavetpol, Tiflis, Baku, Daghestan, and Kutais, where the climate and soil were found singularly well adapted to cotton.

Manufacturers were interested in the possibility of cotton growing in Transcaucasia, and the services of expert cotton growers were secured. Experiment stations were established, a superior quality of cotton seed was imported from the United States, and American methods of cultivation were adopted, so far as the conditions permitted. A ready sale for the crop was secured in the Moscow market.

In a few years the results surpassed all the expectations of the planters, and in 1894 such interest was shown that it was feared that the cereal crops might be neglected and a famine result. It was found, however, that the area devoted to cereals was also increasing. The cotton crop in 1912 was the largest and best on record. About 323,000 acres are reported to have been planted to cotton in the eastern part of Transcaucasia, and they are said to have yielded about 27,775 tons of ginned cotton. It is said that the area at present available for cotton cultivation in the extensive plains of the Governments of Baku and Elizavetpol, between the Arax and Kura Rivers, and in some parts of the Governments of Erivan and Tiflis, could, with little difficulty, be increased to about 600,000 acres.

With this object in view, and in order to more generally encourage cotton growing, particularly in these districts, the Russian Government took up the question in 1912, and a congress of cotton growers was convened at Tiflis by the Caucasian Cotton Association in November of that year. There were 300 delegates present, and with the improved methods suggested, it was estimated that the cotton acreage of Transcaucasia could be increased to 1,000,000 acres.

IRRIGATION NECESSARY.

The extension of the cotton-growing area of Russia is almost entirely dependent on the development of irrigation systems in the available regions. While many projects are planned for this purpose, the actual extension of the irrigated area has been slow. An irrigation company formed about four years ago by Moscow merchants, with a capital of $15,000,000, obtained a concession from the Government early in 1912 of 1,345,000 acres and took under consideration the feasibility of irrigating a tract of 672,500 acres in the Ferghana district. The Russian Department of Agriculture has also undertaken a number of irrigation projects, with a view to increasing the area available for cotton culture. About $5,000,000 has been requisitioned for irrigating the Golodnaya Steppe, in Turkestan, and part of the Muganskaya Steppe, in Transcaucasia. A canal irrigating 32,280 acres was opened in the latter steppe in April, 1911, and another irrigating 21,520 acres was nearly completed during 1912. The plans call for the completion within four years of all the irrigation works in these two regions, providing water for 511,100 acres suitable for cultivation.

Little irrigation work has been done in Turkestan, although the conditions there are very favorable and many attempts have been made. There are two large rivers in that region, the Syr Daria and the Amu Daria, besides a number of small streams. About three-fourths of the country is made up of plains lying some 980 feet above sea level, the lowest portion of the plains being north and southeast of the Aral Sea, where the sandy deserts of the Transcaspian district approach the Caspian Sea. The soils of Turkestan are generally fertile, but always require irrigation, and only about 8,000,000 of the 453,000,000 acres which the country contains are irrigated and cultivated. The amount of water available for irrigation purposes is estimated as sufficient to irrigate a large portion of the country, and in any case to grow sufficient cotton to meet the Russian demand. Lack of means, however, prevent the landowners of Turkestan from building their own systems.

The first productive attempts at irrigation were made at the end of the last century. The canal of Emperor Nicholas I was completed in 1898 and runs through part of the Golodnaya Steppe, and a second canal was built at about the same time. These two irrigate only 51,660 acres. The irrigation of 166,050 acres in the northeast part of the Golodnaya Steppe was undertaken in 1900, but the construction of the canal for that project was found difficult and in 1911 the Government allowed $2,500,000 for its completion. To double the cotton production of Turkestan it is estimated would require a Government expenditure of $200,000,000.

EXPERIMENTS WITH EGYPTIAN COTTON—IMPORTS AND PRICES.

Excellent results have been obtained on a 5,000-acre experimental farm in the valley of Shirabad, in southern Bakhara, with Egyptian cotton. The principal promoter of cotton culture in that region has secured a concession of 200,000 acres from the Ameer of Bokhara for a period of 100 years. The valley of Shirabad is about 200 miles south of Ferghana and has an average of 190 cloudless days per

annum, as against 160 in the Ferghana. The organizers of the new enterprise propose to settle about 10,000 families in this region, allowing 15 acres to each for the cultivation of cotton.

Notwithstanding the steady increase in the output of Russian cotton the demands of the manufacturers are still unsatisfied and about one-half of the raw cotton consumed in the Empire still comes from abroad, principally from the United States. Of the 1,692,000 bales (500 pounds each) used by the Russian cotton mills in 1911, 828,000 bales were Russian, 648,000 bales American, and 216,000 bales from other countries.

The home production of cotton has undoubtedly been stimulated by the high customs duty on raw cotton. This serves to maintain cotton prices per pound at a relatively high level, as shown by the following schedule of prices on the Moscow Exchange and at Khokan:

Months.	Moscow.		Khokan.	
	1911	1912	1911	1912
	Cents.	*Cents.*	*Cents.*	*Cents.*
January	23.95	18.25	20.96	15.53
February	23.54	19.38	21.10	17.11
March	23.54	19.38	.....	16.25
September	20.69	20.82	15.98	.....
October	17.97	19.25	14.73	16.53
November	18.11	20.82	14.68	18.83
December	18.25	22.13	14.98	.....

The decrease of cotton prices at the end of 1911 and the beginning of 1912, together with the rise of prices of cereal products in the cotton-growing districts, caused a reduction of the area under cotton in Russia. According to information collected by the Cotton Committee of the Ministry of Agriculture this reduction amounted to 3 per cent in Ferghana, 10 per cent in the Samarkand district, and about 10 or 15 per cent in Bokhara. In the Syr-Daria and Transcaspian districts, on the contrary, an extension of the cotton area of 30 per cent was observed.

CROP IN 1912.

The conditions for the development of the crop were so good that, in spite of the reduction of the area under cultivation, the 1912 crop exceeded that of the previous year as far as can be judged by the average yield per acre and the quantity of cotton transported via Orenburg and Krasnovodsk. The data in regard to the transportation of cotton by way of these two towns during the period September 1 to December 31 for the last three years are as follows:

Towns.	1910	1911	1912
	Pounds.	*Pounds.*	*Pounds.*
Krasnovodsk	57,381,900	36,545,300	67,023,800
Orenburg	89,377,200	113,156,900	89,059,400
Total	146,759,100	149,702,200	156,083,200

The total crop of 1912 is estimated by the Cotton Committee at 1,073,215 bales (of 500 pounds each) of clean fiber; in industrial circles, however, it is supposed that the actual crop will not exceed 821,500 bales.

FLAX AND HEMP.

In 1909 Russia ranked second among the countries of the world in the area devoted to the cultivation of flax and in the production of flaxseed and fiber. Flax and hemp are grown in nearly all the Provinces of Russia, but the industry has been particularly developed in the Governments of Pskov, Tver, Smolensk, Viatka, Livonia, Vitebsk, Perm, Kovno, Vladimir, Kostroma, Yaroslev, and Mohilev, in the order named. There were in 1910, 3,887,259 acres under flax cultivation and 2,001,036 acres in hemp, yielding about 630,000 tons and 123,752 tons, respectively. Flax and hemp together rank third among Russia's exports, being exceeded in value by only grain and timber.

The exports of flax and hemp from Russia from 1907 to 1912 are shown by the following table:

Years.	Flax and tow.		Hemp and tow.		Linseed.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.		*Tons.*		*Tons.*	
1907	270,846	$33,511,565	69,427	$7,592,645	94,886	$3,995,370
1908	304,648	33,611,990	69,571	7,235,235	151,349	7,166,225
1909	203,203	34,979,830	59,947	6,402,480	108,681	5,429,130
1910	280,492	38,062,105	53,230	5,942,070	161,876	10,191,335
1911	248,817	36,252,395	74,085	9,048,550	177,494	10,953,535
1912	389,820	59,793,045	71,016	10,012,630	184,067	10,477,675

The United Kingdom is the principal buyer of Russian flax, followed closely by Germany.

In 1910 there were 414 factories in Russia engaged in the flax, hemp, and jute industries, with an annual production valued at $36,000,000 and giving employment to 52,000 persons. The factories operated 367,690 spinning and 37,700 twisting spindles, turning out 991,156,000 pounds of yarn per annum, and 12,380 linen looms, of which 11,581 were power looms and 799 hand looms.

INTERNATIONAL DEMAND FOR FLAX KEEPS PRICES UP.

The decrease in flax prices noted during the second half of 1911 did not recur in 1912, and the year was more favorable to the flax producers. This was chiefly due to the increased world demand for flax and to the efforts of manufacturers to secure a sufficient stock of the raw material. The size of the 1912 crop had not much influence on the maintenance of high prices, as it nearly approached that of 1911, and had the demand last year been limited to the amount required in 1911, the price would not have gone up to the high level reached during the last months of the year.

The success of the 1911 crop led to the extension of flax plantations in the spring of 1912, but, owing to various unfavorable circumstances, the efforts of the growers did not meet with any considerable success.

Although the area planted to flax was increased by 2 per cent, in August it was found that the crop would not exceed that of the preceding year, and prices, which had showed a falling tendency in the anticipation of a plentiful crop, became steadier. The flax season was delayed by unfavorable conditions for retting the fiber in some districts, the slow work of the flax growers on account of their being also engaged in other agricultural pursuits, and the fact that a great number of producers were not in actual need of money and were not in a hurry to dispose of their produce. During October and part of November prices wavered slightly, due to the usual holding back of purchasers who were trying to obtain a reduction of prices, but in the beginning of December they became steady and remained firm to the end of the year.

NO SURPLUS AT END OF 1912—PRICES COMPARED.

During the first half of the 1912–13 flax campaign there was a lively demand, all the supplies brought to the market finding a ready sale, so that at the end of the year there was no surplus stock. On the contrary, flax traders and exporters were obliged to send agents to the Provinces to purchase flax at the places of production. This led to a rapid realization of the crop, and the exports of flax from Russia during the last quarter of 1912 showed a considerable increase over those of the same period in 1911. The exports during the entire year 1912 also showed a great increase over those of the preceding year, which apparently indicates that the Russian spinners are well provided with raw material. The demand on the part of exporting firms continues, with no sign of a decrease in the exports. The fluctuations in flax prices (per short ton) in the last five years is shown by the following table:

Markets.	1908	1909	1910	1911	1912
Kostroma:					
Beginning of season	$153.02	$153.02	$183.88	$194.22	$178.00
End of year	161.82	161.82	203.05	164.80	183.88
Beshetzk:					
Beginning of season	138.28	145.65	176.57	180.97	182.45
End of year	144.20	161.82	182.45	157.42	179.48
Ostrov:					
Beginning of season	133.88	153.02	172.11	207.20	186.85
End of year	144.20	154.45	186.85	160.34	188.31

ACTIVITIES OF FLAX SOCIETIES.

A flax committee was established by the Ministry of Agriculture on May 10, 1912, formed of representatives of the ministries and the flax producers, traders, manufacturers, and others interested in the industry. A new stock company, the Russian Company for Flax Industry, which is likely to become an important competitor of the foreign exporters of Russian flax, was established last year, and the object and plans of the organization were determined at the first congress of representatives of the flax industry at Moscow in March. The association has a permanent council at Moscow.

At a recent meeting of the Society of Flax Manufacturers the establishment of a special section at the Moscow Technical School for the

mechanical and chemical technology of flax fiber was discussed, and it was decided to address a petition to the Minister of Education after a preliminary interview with the president of the technical school. It was also decided to present to the consideration of the second congress of representatives of the flax industry the question of the revision of the commercial treaty between Russia and Germany regarding the protection of the flax industry. The society concluded to take part in the fourth Congress of the International Federation of Flax Manufacturers at Ghent in June, 1913, and to make up a report on the organization of annual statistics and the situation of the flax industry in Russia.

HOPS.

Russia ranks fifth among the hop-producing countries of the world. Unfavorable harvesting in July and August, 1912, in the hop-growing districts decreased the yield and injured the quality. In Volhynia the hops did not ripen and were second grade, while almost half had to be classed as third grade and worse. The best crop was in the Vistula district of Poland, where weather conditions were more favorable. As a whole, the yield was not much below that of 1911, being estimated by the growers as follows:

Districts.	1911	1912
	Pounds.	*Pounds.*
Volhynia	5,778,000	5,417,000
Vistula	1,445,000	1,264,000 to 1,372,000
Guslitzy:		
Superior quality	650,000 to 722,000	722,000
Local varieties	361,000	542,000
Kostroma	1,625,000 to 1,661,000	1,733,000 to 1,805,000

The fact that only one-third of the crop was first class had a serious effect on prices, which were also depressed by declines at Nuremburg and reports of favorable crops in Germany and Austria. Russian dealers paid only 17 to 21½ cents per pound for the best quality in Volhynia. Efforts of the growers to sell direct to exporters and brewers resulted in the sale of only about 10 per cent of the crop in that manner. In the Vistula district, however, where the quality was better, there was better organization among the growers and more direct sales were made, the best kinds bringing 32 cents per pound.

Practical assistance was given to the hop growers by the various zemstvos, which established hop-drying places and storehouses and advanced loans up to 7 to 8½ cents per pound on the hops, enabling growers to wait for favorable prices. The Bogorodsk Zemstvo of Moscow Province showed great efficiency in this respect.

SILK.

The cultivation of silkworms has been carried on in the Don Territory on a small scale for a great number of years, having been introduced into the village of Krymsky by the wife of a Russian officer. In 1888, in an attempt to aid the peasant and Cossack population, about 3,000 three-year-old trees were planted in the Rostoff district.

Another mulberry plantation was started in 1902 at Novo-Tcherkassk by the Forestry Department of the Cossack Territory. In 1907 the Don Society of Agriculture engaged a specialist as instructor in the cultivation of silk, to assist the peasants. He distributed 1 pound of silkworm eggs among 17 families, whom he helped with special advice and directions. It was found that the producers of silk cocoons were in the habit of selling their produce to an agent of the Government, who paid such low prices that the industry was not profitable. A new market was found for the cocoons in a large silk-manufacturing firm in Moscow, which paid much better prices and encouraged the cultivators to increase their production. At the end of the first year there were 52 families engaged in the industry.

The same specialist was reengaged by the Government for five months of the next year and 5 pounds of eggs were distributed. He succeeded in interesting more people in the industry, so that at the end of the year 148 families were reported to the Ministry of Agriculture as being engaged in silkworm culture. In 1909 no supply of eggs was obtained by the Government, and the cultivators would have been without the necessary supply for the season had it not been that the expert employed in the preceding year had in his possession 2 pounds of eggs. From 1907 to 1911 there is no record of the condition of the industry. Interest was revived in the latter year, however, and the establishment of a Government experiment station has been suggested to provide a fresher and higher quality supply of silkworm eggs than is imported.

CONDITIONS ON THE SILK MARKET.

Conditions in the Russian silk market in 1912 were similar to those in the foreign market. Trade was slow during the first half of the year. Some animation was shown in the autumn, as a result of a brisk sale of goods at the Nizhni Novgorod fair and rising prices for raw goods abroad. Another lull occurred during the last two months. Prices showed no great fluctuations, those for most kinds of silk rising by 14 to 30 cents above the January prices, but toward the close of the year showing an increase of only 7½ to 22 cents a pound. Declines below the January prices of 7½ cents a pound for Caucasian "grège" and 7½ to 15 cents a pound for Caucasian weft were noted, on account of increased supplies.

The prices for silk in January and December, 1912, on the Moscow Exchange were as follows:

Varieties.	January.	December.	Varieties.	January.	December.
Grège (raw silk):					
Italian—	*Per pound.*	*Per pound.*	Warp:	*Per pound.*	*Per pound.*
9/10 for doubling	$3.92–$3.99	$4.14–$4.21	Italian 18/20	$3.49–$3.64	$3.64–$3.71
13/15 for weaving	3.85– 3.99	4.06– 4.14	Japanese No. 1½, 28/30	4.21– 4.35	4.35– 4.42
Japanese filature No. 1, 13/15	3.64– 3.71	3.71– 3.78	Weft:		
Chinese filature No. 1, 13/15	3.71– 3.92	3.85– 4.06	Japanese 28/30	4.06– 4.21	4.21– 4.28
Tsatli 18/22	2.99– 3.07	2.99– 3.07	Caucasian 28/30	3.49– 3.64	3.35– 2.56
Canton best 1, 13/15	3.21– 3.28	3.35– 3.42	Caucasian 36/40	3.28– 3.42	3.14– 3.28
Caucasian—			Caucasian besdeniev	2.57– 2.85	2.71– 2.99
For weaving, 13/15	3.64– 3.71	3.49– 3.64			
For doubling, 13/15	3.07– 3.21	3.07– 3.14			

Notwithstanding the dull market for silk goods, the factories did not decrease their production until the last months of the year. The imports showed little difference from those of 1911, the raw silk imported amounting to approximately 3,214,000 pounds in each year. The imports of silk waste and floss silk dropped from 2,672,000 pounds in 1911 to 2,347,000 pounds in 1912, while those of twisted and spun silk, including artificial silk, rose from 372,000 pounds to 462,000 pounds in the same period.

COCOON PRODUCTION IN TURKESTAN.

The Province of Ferghana was the principal silk-producing region of Turkestan in 1912, the official statistics crediting it with an output of 5,902,992 pounds of cocoons, as compared with 885,108 pounds from the Hodjent district of Samarkand Province and 69,256 pounds for the Province of Syr-Daria. Official figures for the production of all Turkestan prior to 1912 are not obtainable, but the following totals are given for the cocoon crops of the Ferghana: 1907, 6,348,456 pounds; 1908, 5,512,248 pounds; 1909, 5,282,676 pounds; 1910, 5,902,992 pounds; 1911, 5,320,800 pounds. A decreasing tendency is shown by these figures, but the Government investigator who studied the situation in 1912 states that the official figures are far below the actual output. He estimates the production for 1911 at not less than 7,200,000 pounds.

The figures obtained for the cocoon production of the Hodjent district show considerable fluctuations, but on the whole indicate a falling off, and the same is reported of Syr-Daria. This is supposed to be due to the poor quality of the silkworm eggs imported in large quantities from Asia Minor, which are not sufficiently regulated. Many cultivators have given up the industry and turned their attention to cotton and grapes. There were formerly a number of concerns producing silkworm eggs for the market, but only four or five are now active, the rest having abandoned the business on account of inability to compete with Asia Minor. Another drawback is the small number of mulberry plantations, particularly in Hodjent and Khokand.

According to Mr. Sobolevsky, the Government investigator, the measures needed to promote the silk industry are as follows: Control of the silkworm eggs placed on the market; appointment of a large number of instructors; increased cultivation of mulberry trees; introduction of the industry into the hilly districts, where the climate is suitable and other industries do not offer strong competition.

PRICES AND SALES.

The amount of silk collected in the Caucasus last year was less than in 1911, on account of unfavorable weather. Prices of cocoons were comparatively low, nevertheless, as the foreign market was dull. In the Kutais Government of western Transcaucasia cocoons sold at 28 to 40 cents a pound, as against 40 to 45 cents in 1911. In eastern Transcaucasia prices stood at 28 to 35 cents a pound, as against 28 to 55 cents in the preceding year. Increased supplies of Turkestan cocoons, which were formerly chiefly sent abroad, appeared on the Moscow market in 1912. This was partly due to the dullness of the foreign market, but chiefly to the influence of the banks which

financed the cocoon business. In many instances these banks encouraged the sale of cocoons to the Moscow silk mills. There are now several factories in Moscow engaged in reeling silk, and the number seems likely to increase with the increased supply of cocoons.

OILSEEDS.

Oilseeds, principally linseed, occupy a prominent position among the agricultural products of Russia, the total exports in 1912, including seedcake, being valued at more than $35,000,000. In the production of linseed Russia ranks second only to Argentina, although its exports are exceeded by both Argentina and the East Indies. Argentina exported 674,500 tons in 1912, and the East Indies 469,000 tons. Rape, hemp, sunflower, and mustard seeds make up the bulk of the rest of Russia's output of oleaginous seeds. The latest detailed figures available show that Russia exported 11,871 short tons of hempseed, 30,399 short tons of rapeseed, and 57,692 short tons of poppy, sunflower, and other oilseeds in 1911.

The quantity and value of the exports of oilseeds and seedcake from Russia during the last three years were as follows:

Products.	1910		1911		1912	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
Linseed	162,000	$10,191,000	177,500	$10,954,000	184,000	$10,478,000
Other oilseeds	48,500	2,222,000	100,000	3,884,000	134,500	5,534,000
Seedcake	632,000	16,205,000	726,000	17,718,000	770,000	20,027,000

The exports of oil cake in 1911, the latest year for which detailed statistics are available, consisted of 164,508 short tons of linseed cake, valued at $993,060; 76,892 short tons of hempseed cake, valued at $1,461,564; 271,378 short tons of sunflower-seed cake, valued at $6,449,217; 39,368 short tons of rapeseed cake, valued at $627,742; and 173,638 short tons of other seedcake, valued at $3,563,550.

The center of the sunflower-seed crushing industry was at first in the Provinces of Tchernigov, Kief, Poltava, and Kharkof, but the principal cultivation district is now in the Kuban and Stavropol governments. Much of the seed is eaten either raw or roasted by the populace, much as peanuts are used in the United States. The bulk of the seed, however, is pressed for the oil, which finds a ready sale as lenten fare. Little of the oil is exported, as the home demand is large.

THE OILSEED TRADE IN 1912.

The oilseed market was dull during the last months of 1911, but became steadier, with a rising tendency in some sections, during the first days of 1912. This was due to the diminishing supplies and the prospects of brisk business on the home market during Lent. The decreased exportation from Argentina also had considerable influence, affecting chiefly the linseed trade. Argentina usually ranks first as a source of supply for linseed, but during the first two months of 1912 Europe was supplied chiefly by Russia and the Danube region,

whence, according to English information, 92,500 tons were exported during January and February, while only 70,000 tons were shipped from Argentina. The seed trade on the domestic market was dull during the spring, with only slight fluctuations in prices.

Prices grew firmer at seeding time, the rise being partly caused by the increased demand from the oil factories. When navigation began the demand for oil grew, as usual, and prices rose immediately. Trade was quiet during the summer months and prices were subject to some pressure, as the prospects for the coming harvest were reported as good. Rain interfered with the harvest, however, and the expectations of a good crop were not realized, so that prices rose in August. The quantity was up to the average, but the quality of the seed suffered from the damp weather. Considerable quantities of damp seed were placed on the autumn market in the south and southeast, and factory owners and speculators were therefore careful about buying. Prices for oil and seed varied and traders were cautious. There was no change for the better in November and prices continued to fall, as supplies of inferior grades predominated. In some districts the winter prices for oil were 15 to 20 per cent below those of the autumn. In the northwestern districts, the chief linseed section, trade was not brisk and prices continued to fall during the second half of 1912, partly on account of the decreased export demand.

PRICES AND EXPORTS OF OILSEEDS AND THEIR PRODUCTS.

The oil-cake market was also in an unsatisfactory condition. A brisk demand for cake in western Europe during the first half of 1912 kept prices up, but toward the end of the year the demand dwindled. The fluctuations of prices per 100 pounds for oilseeds and their products during 1912 are shown by the following table, the prices being taken at the middle of the month:

Products.	January.	May.	August.	October.	December.
Sunflower seed:					
Armavir	$1.71–$1.74	$1.85	$1.68–$1.71	$1.47–$1.54	$1.35–$1.40
Moscow	1.57– 2.50	$1.64– 2.50	1.64– 2.50	1.43– 2.50	1.43– 2.35
Saratov	1.71– 2.11	1.85– 2.14	1.78– 2.14	1.35– 1.71	1.21– 1.67
Voronezh	1.80	1.71	1.50	0.93– 1.40	0.71– 1.35
Linseed:					
Ekaterinoslav	3.42– 3.49	3.28– 3.35	2.85– 2.89	2.35– 2.50	2.04– 2.07
Riga	3.17– 3.21	3.17	2.89– 2.91	2.35– 2.67	2.25– 2.48
Sunflower-seed oil:					
Armavir	6.27	6.59	6.63– 6.70	6.02– 6.03	5.42– 5.49
Moscow	6.84– 7.42	7.06– 7.27	7.13– 7.20	6.70– 7.27	5.70– 6.42
Saratov	6.84– 6.92	7.13– 7.20	7.91– 7.99	6.35– 6.42	5.78– 5.85
Voronezh	6.84	6.56	6.99	6.49	5.78
Linseed oil:					
Moscow	7.20	8.41– 8.56	7.70– 7.84	6.99– 7.13	6.77– 6.84
Sunflower-seed cake:					
Novorossisk	1.17– 1.18	1.13– 1.14	1.17– 1.20	1.11– 1.13	1.07– 1.10
Saratov	1.08– 1.10	1.11	1.08– 1.10	1.04– 1.06	0.96– 0.97
Linseed cake:					
Riga	1.90– 1.91	1.67– 1.68	1.70– 1.71	1.66– 1.67	1.54– 1.55

Linseed and linseed cake predominated among the exports, as usual, but the shipments of other oilseeds, such as rape and sunflower, also increased. There was considerable foreign demand for oil cake, especially in the first half of the year, and the exports increased.

FRUIT.

The cultivation of fruit trees is extensive throughout Russia, but no exact statistics of this branch of agriculture are available. The domestic market for fresh apples, pears, peaches, cherries, prunes, and apricots is practically supplied by Russian fruit growers, oranges and lemons being the only fruits imported in large quantities. Grapefruit have recently been introduced, but are to be had only in stores dealing in fancy fruits, at about 40 cents each at retail. The fruit is fair to very good in quality.

The apple is the most generally cultivated fruit. Central Russia produces most of the cheaper grades of apples for the northern market, which sell for 1 to 8 cents a pound wholesale in Moscow. The more expensive varieties, selling for 8 to 14 cents a pound wholesale in Moscow, come from the Crimea, Turkestan, and the Tyrol. Apricots come chiefly from the Crimea and the Caucasus, and sell for 8 to 21 cents a pound wholesale. The first apricots of the season are obtained from Tashkend, Turkestan, and bring high prices.

The fruit regions of the Crimea are the most important commercially, the orchards in that section covering 16,140 acres and producing more than 36,000,000 pounds of fruit (exclusive of grapes) and 9,000,000 pounds of nuts per annum. The principal fruits cultivated in the Crimea are apples, pears, and peaches.

Fruit cultivation is extensive in the Caucasus, especially near the Black Sea, where the orchards are favored by sufficient moisture and protection from the cold, dry winds of the east and northeast. Oranges, lemons, olives, and tea are grown there, as well as apples, pears, and peaches.

Central Asia (Turkestan), which has a settled population, is another large fruit-producing region. The Government of Semirietchensk is noted for its apples, the orchards in the vicinity of Syr-Daria covering some 16,000 acres. Large quantities of almonds, peaches, and pomegranates are also produced in Central Asia. On account of the favorable climate the fruit crops of this region mature earlier than those of other sections of the country and command high prices. Experimental refrigerator trains have been run successfully from Samarkand and Tashkend to Moscow, and large amounts of fruit from Central Asia will go to the northern markets on the establishment of regular refrigerator-car service. The best peaches come from Turkestan, while large quantities of the cheaper varieties, which sell at wholesale in Moscow for 5 to 14 cents a pound, come from the Caucasus, the Crimea, Bessarabia, and Podolia. Hothouse peaches grown in the environs of Moscow or imported from abroad sell for about 25 cents each at wholesale.

Almonds are cultivated chiefly in southern Bessarabia, southern Crimea, the northern part of the Caucasus, and Central Asia, and nuts, figs, pistachios, and pomegranates in the Crimea, the Caucasus, and central Russia. Gooseberries, raspberries, and strawberries are cultivated in nearly every district. Bessarabia and Podolia are the principal fruit-growing districts in the southwest. The area of vineyards in the former Government is 134,500 acres, and that of orchards 21,500,000 to 24,000,000 acres. The mild and equable climate in the basin of the Vistula River is favorable for the cultivation of the more delicate fruits, and the latest methods and appliances are in use in

the Governments of that region. The vineyards of Kherson cover about 120,000 acres and produce about 54,000,000 pounds of grapes per annum. Kief and Bessarabia produce most of the prunes, which sell at wholesale in Moscow for 3 to 6 cents a pound.

Vineyards abound in the Baltic Provinces, and cherries, apples, pears, plums, berries, and other fruits are grown in the northwest Governments of St. Petersburg, Pskov, and Novgorod.

Central Russia supplies most of the pears consumed in the country, the wholesale prices on the Moscow market ranging from 4 to 28 cents per pound. Superior grades of pears were formerly imported from France, but Turkestan is now competing successfully. The Government of Vladimir produces chiefly cherries, while strawberries, gooseberries, and raspberries are extensively grown in the Moscow Government. In the Governments of Tula and Voronezh fine grapes are grown by the peasants, while the orchards of the first-named region cover more than 120,000 acres.

In the east, fruit growing is most extensive in Samara, Simbirsk, Saratoff, and Kazan, apples and cherries being the principal fruits.

FRUIT PACKAGES—IMPORTS OF FRESH AND DRIED FRUIT.

The expensive varieties of apples and pears are packed in cases containing 15 kilos (33 pounds) net weight. Double cases contain 30 kilos. Each piece is wrapped in tissue paper and the fruit is generally placed in double rows, between layers of wooden shavings. The cases used for packing apples are 10.3 by 4.57 by 1.7 to 2.3 inches, and for pears 9.7 by 4 by 1.7 inches. Cheaper grades of these fruits are packed in cases containing 90 to 108 pounds net weight, with interlayers of straw. Fruits imported from the Tyrol are packed in barrels. Peaches, apricots, etc., and all kinds of berries are packed in large round sieves, called "resheto," the bottoms of which are made of Russian matting. Each of these cases is about 15 inches in diameter and 4 inches in height. They are firmly tied to boards by twos and fours for transportation.

The small extent of the importation of fresh fruit into Russia is indicated by the fact that the total imports of this class amounted to only 1,512 short tons, valued at $172,010, in 1910; 3,240 short tons, valued at $398,855, in 1911; and 3,294 short tons, valued at $389,855, in 1912. There has been considerable talk about the possibility of exporting Crimean apples and other fruits to London, but little has been accomplished in that direction.

Considerable quantities of dried and evaporated fruits are imported into Russia, the imports over the European frontier, exclusive of figs, dates, raisins, and prunes, amount to 882 short tons, valued at $112,785, in 1911, and 918 short tons, valued at $117,935, in 1912. The imports of dried plums and prunes in 1911 totaled 3,078 short tons, valued at $415,090, and in 1912 they amounted to 2,250 short tons, valued at $323,420. Dried apples are imported chiefly from Rochester, N. Y., and other dried fruits, chiefly prunes, apricots, pears, and peaches, from California. Considerable quantities of dried fruits are also imported over the Persian frontier. The total imports over the Asiatic frontier amounted to 47,160 short tons, valued at $3,836,235, in 1911, and 40,284 short tons, valued at $3,543,-

285, in 1912. As yet Russia lacks the modern appliances for the production of dried fruit that are used in the United States and also the skilled laborers, which explains the absence of domestic dried fruit on the market. The business has developed considerably in recent years, however, principally in Turkestan and the Caucasus.

THE DRIED-FRUIT MARKET.

A considerable amount of American dried fruit is imported by way of Hamburg and is sold by Hamburg firms. These imports are indicated as coming from Germany, while the quantity of fruit imported direct from California is comparatively small.

The packing used for the lower grades is usually of the American type. As a rule, American dried fruit is imported in cases containing 12½ kilos net weight (27½ pounds); dried fruit from Hamburg is transported in cases containing 30½ pounds net weight. Prices for dried fruit depend on the American prices, with the exception of prunes.

The high grades of the latter are supplied by France, and great quantities of the lower grades come from Hungary, South Bessarabia, and lately also from the Caucasus.

The wholesale prices per pound for fancy grade dried fruits in March and April, 1913, were as follows: Apricots, 18 to 19 cents; apples, 13 to 15 cents; pears, 18 to 18¾ cents; peaches, 14¾ to 15 cents; prunes, 8 to 13 cents. First-class firms do not deal in lower grades, and it is considered that fancy fruit finds a readier sale than low grades. This is especially noticeable in regard to apples. In these goods a comparatively slight difference in quality will cause a considerable one in price. The quality is judged according to the color of the fruit and principally by the absence of peel and core. According to the quality, the prices for evaporated apples may vary from 15 cents to 2 cents a pound. Dried and evaporated fruit is becoming popular with the public, and if prices could be lowered, the quality of the goods remaining satisfactory, a brisk sale could be guaranteed.

DRIED-FRUIT PRICES.

The prices of dried fruit on the Moscow market in April, 1913, were as follows:

Fruit.	Cents per pound.	Fruit.	Cents per pound.
Prunes:		Apples, cut:	
Moldavian—		Russian	5.15– 6.8
Dried by primitive process and tasting of smoke	2.8	American	18.6
Better quality	5.4– 6.29	Pears, American	21.4 –22.8
American—		Apricots, American	22.8 –24.3
30/40	17.16	Peaches	18.6 –20.0
40/50	14.5	Silver plums, American	20.0
50/60	13.7	Nectarines	20.7
80/90	11.4	Mirabelles	20.0
French—		Cherries, Moldavian	6.8 – 9.7
Imperiale	18.6–20.0	Figs:	
Sur-choix	17.1–18.6	Italian	20.0
Choix	15.7–17.1	Various kinds	6.3 –20.0
Demi-choix	14.3–15.7	Raspberries	14.3 –17.1

There are no laws governing the importation of dried fruit into Russia, beyond the enactments that in the preparation of dried fruit no material shall be used which might be injurious to the health.

In this connection it has been stated that in the south of Russia, owing to the spreading of a statement that sulphuric acid was used in America for the purpose of preserving the good appearance of dried fruit, the demand ceased and at present there is scarcely any in the market. In Moscow the question has not been raised.

The duty on dried fruit of all kinds (without sugar) amounts to $2.08 per 36 pounds, or about 6 cents a pound. A conventional tariff is established for dried prunes (without sugar) and amounts to approximately 2 cents a pound. If the dried fruits are packed in small boxes, packages, etc., in which they are sold to the retail buyer, the duty is calculated on the gross weight of these packages.

[A list of Russian exporters of fresh and dried fruits is on file in the Bureau of Foreign and Domestic Commerce.]

CANNED AND PRESERVED FRUIT, JAMS, JELLIES, ETC.

Canned fruits are becoming very popular among Russians. They are sold in 1 and 2 pound cans, as a rule, and the retail price is usually about 23 to 28 cents per 2-pound tin. The canned fruits most in demand are peaches, pears, apricots, cherries, tomatoes, and plums (greengages). These goods are supplied from the Dagestan district of the Caucasus, the Crimea, and Turkestan. The imports from foreign countries are insignificant. The home produce is good and comparatively cheap.

The demand for fruit jellies, etc., is insignificant, as these kinds of preserved fruit can not compete with the jams, which are manufactured in enormous quantities in Russia by dealers, as well as by nearly every household for its own use. These jams are made from different kinds of berries and fruit. Loganberry, however, is not known in Russia. A few years ago several attempts were made to introduce this fruit, but without results.

The customs duty for preserved fruit in hermetically-sealed packages, tins, etc., is $7.72 per 36 pounds, gross weight. To avoid paying the high duty, it would be well, if possible, to have the fruit come in glass jars with a glass stopper with rubber band, or a metal cap made to screw on, in which case it is believed that the rate of duty would only be $2.57 per 36 pounds, gross weight.

LARGE AREAS DEVOTED TO WINE PRODUCTION.

The vineyards for wine production in Russia cover more than 600,000 acres and can be divided into the following districts: The Bessarabian region, embracing the Governments of Bessarabia (183,600 acres of vineyards), Kherson (18,900 acres), and Podolia (3,510 acres); the Crimea, including the Governments of Taurida (35,100 acres) and Ekaterinoslav (1,350 acres); the Caucasus (324,000 acres); the Don region (8,100 acres); Astrakhan (2,700 acres); Central Asia (56,700 acres). The output of wine varies from 2,400 to 9,000 bottles per dessiatine (2.7 acres) in Bessarabia to 11,000 to 13,000 bottles per dessiatine in the Caucasus.

Both in quantity and quality of product the Caucasus takes first place, the climate of that region being especially favorable for grape cultivation. At present the population of this district is not sufficiently familiar with improved methods of wine production, while the small exportation has held back the development of the industry. It is believed, however, that the industry has a great future in this district and that the exports will increase with the extension of railways. In some parts of the Caucasus wine is sold at 31 cents per 16 bottles, which would bring $2.16 per 16 bottles in the cities. A distinctive characteristic of Caucasian wines is a certain crudeness resulting from the method of preparation.

The calcareous soil of the Don district produces mostly light, sparkling wines of the champagne type.

Bessarabia produces chiefly light lines, such as hocks and clarets. Dessert wines are largely produced in the Crimea. The rich soil of the southern part of that peninsula yields grapes with a high sugar content, which produce a strong wine with 14 to 15 per cent of alcohol and a muscatel flavor. In some parts of the western coast of the peninsula the soil closely resembles that of Bordeaux, while in other parts of the same coast it is like the soil along the Rhine. The wine producers of the Crimea are equipped with the latest improvements and all necessary measures are taken to insure the proper preparation of the wine. The cellars of the local proprietors are well aired and an even temperature is maintained.

The Astrakhan district is not important in the wine industry, as most of the grapes are sold as fruit. Central Asia produces wines containing a large percentage of sugar and alcohol, whose consumption is limited to the district itself, as they do not stand transportation.

In spite of the great development of the domestic wine industry, Russia consumes large quantities of foreign wine, the imports being valued at about $5,665,000 per annum. The exports of Russian wine have not reached any large figure, being estimated at $95,790 for 1911, of which $78,280 represents wine in barrels, $10,300 still wines in bottles, and $7,210 sparkling wines in bottles. The exports went to Germany, Austria, England, the Netherlands, China, Persia, Turkey, and France; Turkey and China taking the greatest part. In view of the good qualities of Russian wines, it is expected that the introduction of improved methods of manufacture will cause a considerable increase in the exports. [A list of wine exporters in southern Russia is on file in the Bureau of Foreign and Domestic Commerce.]

MINOR CROPS.

The barley and buckwheat crops in European Russia were above the average. Millet gave a satisfactory yield, and good crops of peas were obtained in the central agricultural, southern, Little Russia, and Volga Provinces. Indian corn came up to expectations and average crops of flax, hemp, and sunflower seeds were obtained. From the 96,922,298 acres of meadows in the Empire in 1912, 67,086,036 tons of hay were cut, which was 13,000,000 tons above the average for the five-year period ending with 1910. Vegetables gave satisfactory returns, but in many instances were of inferior quality.

Successful experiments in the cultivation of tea, oranges and other fruits, and bamboo have been made on an estate of the Russian imperial domains at Chakva, near Batum. The Chakva tea resembles somewhat in taste the teas of Ceylon and India and is sold principally in Poland and Central Asia. Marked success has attended the growing of oranges, the "Umshu" variety of mandarin oranges being cultivated. The fruit is of excellent quality and is gaining in popularity throughout the Caucasus and in Russia.

LIVE STOCK AND DAIRY FARMING.

Live-stock raising is an industry of great importance in Russia and contributes more than $90,000,000 worth of exports to the foreign trade of the country, besides supplying the great home demand. In the more densely settled regions, such as Poland, the Baltic Provinces, and the northwest, dairy farming has secured a firm hold, and is annually increasing in importance.

In the sugar-producing regions of central and southern Russia, breeding cattle for slaughter is carried on extensively, utilizing the by-products from the beet-sugar mills. Cooperation in the purchase of forage and the sale of the products is common among the breeders of this region. In the Kovno Government cattle are raised chiefly for exportation. The number of cattle is not increasing greatly, but the quality of the stock is being continually improved, especially in the dairy-farming regions. A great deal of attention is given by the zemstvos to the encouragement of high-grade cattle raising. A Russian journal, speaking of the increased breeding of first-class cattle, points out that the greater demand for good forage will limit the exportation of shorts, oil cake, etc. As the foreign cattle raisers will have to make up for the resulting deficiency in their supply of these foods by the use of more expensive grain products, the exportation of Russian meat will be stimulated.

The latest available official statistics, showing the number of domestic animals in Russia, exclusive of Finland, are those for 1909, which are as follows:

Divisions of the Empire.	Horses.	Cattle.	Sheep and goats.	Swine.
European Russia	20,960,844	30,734,878	40,149,326	9,743,617
Poland	1,243,376	2,267,678	1,248,300	608,054
Ciscaucasia	1,343,918	2,778,154	5,[illegible],792	683,803
Transcaucasia	[illegible],395	2,981,395	5,678,777	301,745
Siberia	4,178,611	5,184,284	5,458,571	1,190,876
Central Asia	3,384,564	4,544,618	21,456,039	123,153
Total	32,113,708	48,491,007	79,562,705	12,651,298

The winter of 1912–13 was favorable for Russian cattle farming. An abundance of fodder had been stored, and, although its quality was not entirely satisfactory, the condition of the animals in the spring was better than in the spring of 1912. Warm weather set in early, permitting the cattle to be driven to pasture earlier than usual. In some instances peasants had surplus supplies of fodder, which they sold or used to feed more cattle.

During the past seven years the dairy business in Russia has made great strides, and poultry raising has showed equal development. The milk products of western Siberia have reached enormous proportions, and in 1911, 73,800 short tons of butter were produced in that section alone.

COOPERATIVE CREAMERIES.

Small farmers in those districts that are provided with railway and canal facilities in European Russia show a tendency to combine in the operation of central plants for the production of butter to cut down the operating expenses, while in the more primitive regions, wherever new railways are built, and even where new wagon roads are laid out, such as southern and eastern Archangel, Vologda, Viatka, Perm, and Ufa Governments, little creameries are springing up. This is a result of the division of the large estates among the peasants. With the assistance of the zemstvos and the cooperation of the central government, the herds have been increased and dairy supplies obtained. Dairy farming is not carried on so extensively in European Russia as in Siberia, however. The principal centers of the trade in dairy products in that region are Barnaul, Biisk, Semipalatinsk, and other small Siberian towns, with something like a clearing house for the exportation of butter at Omsk, while the main distributing point for the home and foreign markets is Kurgan, in the Orenburg Government.

Siberian cattle are of better blood than the average European stock, and the pastures are also of higher quality and better watered, so that Siberian butter is in favor in Europe and England, the demand heretofore exceeding the supply. Siberian cheese finds a ready market at home, but the better grades are sold throughout Europe.

The latest data available show 1,868 butter factories in Siberia, of which about 30 per cent are managed by artels. In 1909, 379 associations reporting had 49,176 members, owning 258,551 cows. There were 15 factories producing up to 7,500 pounds, 30 making 7,500 to 12,500 pounds, 15 manufacturing 13,000 to 18,000 pounds, 11 making 18,000 to 25,000 pounds, and 8 producing from 25,000 to 40,000 pounds in 1910. The average yield was reported as 1 pound of butter to 20.05 pounds of milk. The milk cost, wholesale, at the creameries 8 cents a gallon, and the highest price obtained by manufacturers for butter was 19 cents and the lowest 17 cents a pound.

The creameries are conducted by artels, or unions, similar to the creamery organizations in the United States. These creameries purchase milk from the near-by farmers and cream from the more distant ones, while many farmers churn their own butter and sell it to the creameries to be rewashed, tested, classified, packed, and shipped to the market centers. Two Moscow firms, Blandow Bros. and Tchitchkin, are virtually in control of the butter and milk trade of Siberia and Russia, while the leading representative of foreign dairy supplies is the firm of Rabotnik, in Moscow, which handles principally the product of Swedish factories.

TRADE IN DAIRY PRODUCTS IN 1912.

The milk trade, which had been injured in 1911 in the regions where crops failed, showed good results last year. The shipments of milk products from the southern and southeastern Provinces to the southern and central markets increased, as did the production of butter in western Siberia for the foreign trade. Poultry products showed a gain, and swine breeding flourished in the southwestern Provinces, where refuse from the production of beet sugar and the distillation of liquor is abundant. Bacon prepared in Libau and Kurgan and hams from Tambov and Vilna are competing successfully on the world market.

Large surplus supplies of butter exercised an unfavorable influence on the butter market, but prices were maintained at a high level by the limited supply of the fresh product. The condition of the foreign market had considerable influence on the position of the Russian market, as the demand from Germany, England, and, periodically, Denmark kept the prices steady at the places of production and prevented them from falling during the slack periods in the consuming markets.

On the Siberian market, which, more than any other in Russia, is under the influence of the demand from abroad, prices were highest at the beginning of the year, when in Omsk and Kurgan they reached 25 cents a pound, as compared with 20 cents in 1911. On the markets of the interior considerable rises in prices were noted in the beginning of the winter in connection with a limited supply of fresh butter. This improved at the end of the year, but the prices throughout the year were on an average higher than 1911, so that 1912 could be considered as a very favorable season for producers and dealers.

The butter industry of Siberia showed a further development in 1912 and the shipments of butter by the Siberian Railway from April to October increased by 9.9 per cent as compared to the shipments during the same period in 1911—65,898 tons against 59,942 tons in 1911. There were also shipped to eastern Siberia and to the Far East 7,800 tons, compared with 5,000 tons in 1911. The total quantity of butter shipped to the ports of the Baltic Sea for exportation abroad was less than in the previous year, representing 90 per cent of the total exports from Siberia, 10 per cent being sold on the interior markets of Russia, while in 1911 the proportion was 94.5 per cent and 5.5 per cent, respectively, the consumption on the interior markets showing an increase of 85 per cent.

The exports of butter from Russia again reached a high figure, although they show a slight decrease as compared with 1911. The exports to England increased from 26,496 tons in 1911 to 34,266 tons in 1912, while the exports to both Germany and Denmark show a decrease. Germany took 24,084 tons, compared with 29,088 tons in 1911; and Denmark, 10,620 tons, against 12,942 tons in 1911. It must be observed, however, that 1911 was an exceptional year in this respect, the exports of butter to Germany exceeding those of 1910 by almost 50 per cent.

Eggs for export sold at $12.84 per thousand, while in 1911 they brought $11.28. The average export price of butter in 1912 was $21.96 per 100 pounds, as compared to $21.71 for the preceding year

DECREASE IN SHEEP BREEDING.

The decrease in sheep breeding in Russia during the past decade or more has aroused the concern of the Russian Government, and efforts are being made through the Department of Agriculture to put new life into this important industry. A falling off in the production of wool, and in some places the absolute disappearance of sheep, have resulted from the evolution through which farm life in Russia is now passing. In European Russia large estates that formerly pastured hundreds of thousands of sheep are being cut up into small tracts for the use of peasant farmers, and with their passing the flocks are also going, as the peasant is not equipped to continue sheep raising and finds greater and more immediate profit in tilling the soil. The high rents prevent those who are forced to obtain their land from the estate owners from raising sheep, and the flocks have fallen to the lowest total of the past half century. Higher wages among the peasants also operate to decrease sheep raising, and it is reported that the income derived from the wool is frequently below the cost of production.

In many sections the farmers, having been unfortunate in the disposal of their fleeces, sold their flocks to the butchers, and in Ekaterinoslav and Kursk, in southern Russia, sheep are now being raised chiefly for killing. In Poland and Tambov Provinces cattle have supplanted sheep, and in many other Provinces the merinos are being kept up only on the large estates. When these lands are divided the fine-wool flocks are disposed of and replaced by coarse-wool sheep, provided it is found expedient to keep sheep at all.

Whole flocks have been slaughtered in the Caucasus for want of pasturage, the mountain dwellers having taken up other agricultural pursuits. Others in those regions have transferred their flocks to Siberia, where the development of the industry is said to be steady and certain on account of the vast unoccupied areas open for grazing.

TYPES OF SHEEP.

Two general types of sheep are raised in Russia—the common coarse-wool sheep (*Ovis brachyura borealis*) and the crossbred merino, the latter being in the minority. The coarse-wool type differs in appearance in various sections of the country, but preserves the same general characteristics and yields about the same quantity of wool the country over. There are varieties of colors, but the wool of all types is coarse, matted, dirty, and greasy. Some sections produce sheep with longer fleeces, but with that exception the quality does not vary. The sheep are small and yield an average of 4 pounds of wool. In the Asiatic sections and in some parts of European Russia the fat-tailed sheep predominate. The merinos are the crossbreeds resulting from the introduction of Spanish types many years ago. These flocks are comparatively small and are not increasing.

According to the manager of a 50,000-acre sheep farm in Russia, the raising of low-grade sheep does not pay at the prevailing prices, but the industry will continue on the large estates, as the want of satisfactory labor makes it impossible to till the land. The peasants

will also keep the breed that produces the coarse, strong wool for their homespun coats and house supplies, and skins used for the manufacture of the overcoats that are so extensively worn in Russia by that class.

The fine-wooled merino is being gradually introduced among the more progressive farmers, but its product is being utilized in the domestic market. This wool brings a price that yields a handsome profit, while to secure sufficient recompense for their labor and investments the raisers of coarse-wool sheep say they would need an increase of about 25 per cent over the prices prevailing in 1911.

The following table shows the decrease in the number of sheep in European Russia and in Central Asia, Siberia, and the Caucasus:

Years.	European Russia.		Years.	Central Asia and Siberia.	Caucasus.
	Coarse wooled.	Fine wooled.			
1881	35,000,000	15,000,000	1900	23,500,000	5,000,000
1896	42,500,000	6,500,000	1905	21,700,000	4,100,000
1902	44,000,000	5,700,000	1910	21,200,000	3,600,000
1907	38,000,000	3,700,000	1911	Not given.	2,400,000
1911	37,000,000	2,200,000			

Shepherds receive not more than 10 to 20 cents a day, paid in supplies required for their homes, and whole families engaged in looking after the flocks are said to receive a bare living wage in farm products, no money being paid.

Formerly millions of sheep that could not be sold profitably on the fresh-meat market annually found their way to the large slaughterhouses known as "salgany." The skins were sent to the fur makers, the fat extracted, and the remainder of the carcasses were salted and formed an important article of trade during the winter months, often being sold as low as 1 or 2 cents per pound. Now, in spite of a steady increase in the price of tallow, comparatively few sheep are sent to these public "salgany," and the day may be not far distant when all the sheep will be eagerly taken for the fresh-meat market.

CHARACTER OF THE INDUSTRY IN DIFFERENT REGIONS.

In the northern and central Provinces of Russia coarse-wooled sheep are raised for meat and their skins, rather than for the wool, which is used chiefly by the peasants in their hand industries. In the south, the wool is the main product. Where sheep are used principally for food, the yearly income per sheep amounts to $1.87, while its cost of maintenance is $3.76, giving a loss of $1.89 on every sheep, which largely explains the decadence of the industry. More satisfactory figures are obtained from the other regions, where all or most of the products of sheep breeding find a market. In those districts the income per sheep is increased, and a clear profit of about $1.34 per sheep is obtained.

Notwithstanding the secondary position to which present conditions in northern and central Russia relegate sheep raising, it is economically beneficial to the peasants, as it supplies their needs, espe-

cially giving work to those engaged in home manufactures. In one industrial region more than 100,000 peasants are engaged in combing wool and knitting mittens and socks. The number of sheep owned by one person is generally small.

In the south sheep breeding is regarded as a more profitable business, and many flocks numbering several thousand head each are owned by capitalists. The people in that part of the country do not keep to one breed, but develop that for which the market shows the greatest demand. This method of sheep raising developed some 40 years ago, when there was plenty of land for pastures and a ready and profitable market. Later, when the sheep had to be transported by rail, the grazing land had been largely devoted to grain, and the prices for wool and tallow had fallen, sheep breeding naturally became less profitable. The market for wool and skins is secure, but the industry is retarded by the inability to dispose of the mutton profitably.

The Government is encouraging the extension of sheep farming on the steppes of Central Asia and Siberia. It appears that merino sheep have been successfully acclimated in Siberia. The plains of the Yenisei have been found to be suitable for the development of sheep farming on a large scale. The soil yields excellent forage, and in good crop years sufficient hay can be obtained to provide a supply for several years. The principal difficulty in the way of transferring the flocks to Siberia is the cost of transportation, and the Government has assigned a credit of $250,000 for transportation, to aid the development of new farms.

EFFORTS TO REVIVE SHEEP INDUSTRY.

To aid in the revival of the sheep industry, a Congress of Sheep Farming was held at Moscow in 1912, which was attended by exhibitors from all parts of the Empire. Many important questions were discussed, including the transferral of the merino sheep industry to Asiatic Russia, the raising of sheep by the peasants, and the relative profitableness of the industry on small and large estates. It was argued that the example of other countries where the sales of mutton and wool are united should be followed. At present, breeders are devoting their attention chiefly to crossbreds, as prices are high for the wool of this type. There is now no fixed domestic market for mutton, and the relatively small amount sold in the southern market and Moscow can have no effect on the general production of mutton. The greater part are killed for their tallow, for which there is a ready market, Australian tallow being imported in large quantities. It is believed that cheap mutton is to be obtained only through the establishment of a system of refrigerators at the slaughterhouses, and in other parts of Russia for storage, and the building of a large number of refrigerator cars on the railways. This will mean a great expenditure on refrigerator equipment, in which American manufacturers should be interested.

It has also been proposed that auction sales be organized as in other countries. Wool intended for such sales must be sorted in accordance with the demands of the market, and the price must be established with a strict definition of the per cent allowed for loss in washing.

THE WOOL MARKET.

The producers and dealers held a larger stock of wool on hand at the opening of 1912 than usual, and prices were held firm by the high cost of production. The result was almost complete stagnation in the better classes of wool, which are all classified as "Spanish." There was no surplus of autumn lamb's wool, and few transactions were made.

The spring shearing began late, on account of the cold, rainy weather. The clip per animal was satisfactory, except in some parts of the Volga district, sections of the Don Territory, and the eastern section of northern Caucasus, but the total clip was below that of the preceding year, on account of the reduced flocks resulting from the decline of sheep raising. The quality was on the whole satisfactory. The late shearing delayed the opening of the spring wool season, as buyers were not inclined to close transactions until considerable lots had appeared on the market.

At Rostoff-on-Don, the chief market for Spanish wool, the spring season passed more rapidly and successfully than had been expected. By the middle of June, 21,666,000 pounds, or about 75 per cent of the district's crop, had been sold. In 1911 only 14,444,000 pounds of a crop of 31,415,700 pounds had been placed at that period. The 1912 prices did not compare favorably with those of the previous year, however. Only the superior qualities brought the same prices as in 1911, the middling and inferior grades selling 3 to 4 cents lower. In general, prices ranged from 18 to 36 cents per pound, according to quality. On the Odessa market prices were lower than in 1911, in spite of a considerable demand and the superior quality of the wool.

SALES AT THE SOUTHWESTERN FAIRS.

At the wool fairs of southwest Russia business was slack. Both demand and supply at the Kakhovsk fair were small, 288,000 pounds of unwashed Spanish wool being sold, as against 361,100 pounds in 1911, and at prices 5 per cent lower. A surplus of 852,196 pounds and the absence of demand on the part of the manufacturers of the district caused the Warsaw fair to pass with few transactions, and only after the fair closed were sales concluded in consequence of reduced prices. Prices were 7 to 13 cents a pound below those of 1911. The Troitzk fair at Kharkof was more successful than that of 1911. Of 1,409,400 pounds offered for sale, 1,211,400 pounds were sold, at from $1 to $1.20 a pound for washed and $0.26 to $0.35 a pound for unwashed, as against 621,000 pounds out of about 700,000 pounds offered in 1911, at $1.20 to $1.30 a pound for washed and $0.26 to $0.36 a pound for unwashed.

After the termination of the large sales there was a considerable demand for Spanish wool, in consequence of the steadiness of the world's market and the prevailing fashion of fabrics made from the finer grades of wool, and prices rose. The successful sale of wool manufactures at the Nizhni Novgorod fair and the large cloth orders placed by the military supply department in the autumn also exercised a favorable influence. At the beginning of December the supply of unwashed Spanish wool at Rostov-on-Don amounted to only 360,000 pounds, as compared with 3,060,000 pounds in 1911 and

4,140,000 pounds in 1910. Prices at the close of the year were therefore much higher than in previous years.

The trade in Russian wool, after some slackness in the beginning of the year, was successful in 1912, with a lively demand from Russian and foreign manufacturers and high prices. There was also active business in autumn wool, with increased prices, as the clip proved to be less than that of the previous year. The supply of Russian wool at the end of 1912 was scanty. The imports of uncombed, undyed wool into Russia increased from 73,188,000 pounds in 1911 to 77,400,000 pounds in 1912, while the imports of combed wool dropped from 21,276,000 pounds to 14,616,000 pounds. The exports of wool show a great increase, totaling 41,940,000 pounds, as against 30,708,000 pounds in 1911.

POULTRY.

Poultry farming is most successful in the Governments of Kazan, Simbirsk, Kief, Poltava, and Kursk, and in much of Poland. In all of these districts sanitary conditions are improved, and the farmers have sufficient supplies of grain at their disposal. In the Litau and White-Russia Provinces conditions are also satisfactory on the whole, but the industry is not developing so well as in Yaroslav. In Voronezh, Kharkof, and Tambov Governments fowls are fattened for sale by both private and commercial raisers, but cold weather in 1912 affected the hatching, and losses were caused by distemper. The industry was unsatisfactory in Volhynia and Podolia; distemper reduced the number of fowls, and this business is decreasing in these Governments. Turkeys suffered most from the rain, but as the peasants seldom raise turkeys the chief losses were experienced by the larger estates. Poultry belonging to the peasants was affected by diseases caused by damp weather, and in the Gaisinski and Olgopolski districts of Podolia Government distemper carried off 50 to 75 per cent of the fowls. The same disease was present, though in a less degree, in Voronezh and Tambov Governments, near Kharkof, in Volhynia, and in Kazan, Kovno, Vilna, Grodno, and Minsk. However, the effects of the unfavorable weather were counterbalanced, and at times even neutralized, by good crops of grain, which is the principal food for poultry in some of the southern Provinces, so that conditions in the Russian poultry industry were quite satisfactory at the end of the year.

PRICES AND TRADE.

Rainy weather and the resultant bad roads influenced the trade in poultry, particularly in those sections remote from railways and trade centers. Nevertheless, the season proved more satisfactory than in 1911, dealers deriving larger profits. All kinds of poultry were in demand, the call for chickens and geese being especially brisk. Average prices might be stated as: Geese, unfattened, $0.45 to $0.75; fattened, $0.75 to $1.75; chickens, unfattened, $0.15 to $0.30; fattened, $0.40 to $0.75; ducks, unfattened, $0.20 to $0.40; fattened, $0.45 to $0.90. The prices for poultry were higher than during 1911, especially near the frontier. In Kovno Government, for instance, the price for fattened geese rose to $1.50 and $1.75, chickens $0.50 and $0.75, ducks $0.60 and $0.90, and turkeys $2 and $2.50 each. The demand for eggs was brisk and prices rose.

The difficulties met with in the development of Russian poultry farming during 1912 were the same as in other years—scant knowledge of improved methods, absence of initiative in the matter of fattening poultry on a large scale, and lack of organization in selling. From only a very few districts is information received that artels have been organized for selling eggs. Some correspondents state that the raising of geese is declining, because the common feeding grounds are restricted in area, or even abolished, now that the peasants are acquiring small holdings.

APICULTURE.

Apiculture has for many centuries played an important part in Russia. When sugar was an imported article and relatively high in price, being sometimes ten times that of beef, honey, the only natural sweet of local production, was in great demand and nearly every large household had its own apiary. Honey and beeswax were exported, the latter article being in the greatest demand, as people in those days had neither found substitutes for it nor methods for its adulteration. With the advent of cheap and good sugar, less attention was given to bee culture, and a half century ago the industry seemed to be on the decline.

Physicians pointed out the value of honey as a remedy for certain maladies, and botanists drew the attention of farmers and fruit growers to the necessity of bees as pollenizers. It was found that sugar was not a complete substitute for honey, and apiculture began to revive. While the production has continued to decrease in some districts, in others, especially where there is a little forest shelter, there has been a distinct increase. Even a considerable conversion of meadows into plowed fields does not prevent the development of the industry if it is given proper attention and if there are locust, wild olive, maple, linden, or similar trees in the neighborhood. Among Russian field crops are also some which are valuable honey yielders, such as buckwheat, clover, rape, flax, etc.

A report from Bessarabia gives the following data regarding apiculture:

Year.	Number of apiaries.	Number of colonies.	Tons of honey.	Tons of wax.
1892	4,082	94,241	123	40
1900	2,977	42,351	120	32
1901	3,590	53,677	214	51
1905	3,418	50,220	253	66

APICULTURE SOCIETIES.

At present there is scarcely a Province in Russia in which there are not apiculture societies providing special courses of study and lectures. In many districts there are specialists who devote their time to spreading information concerning modern methods. Much of this activity is due to the zemstvos—especially to those in the Provinces of Viatka, Kostroma, Ufa, Kazan, Tula, Perm, and the Kolomna district of Moscow Province, all in the eastern central part of European Russia. The recognition of the growing importance of

honey as an article of world commerce is the principal cause of the growth of the industry. At the beginning of 1912 the Council of Ministers approved an appropriation of $50,000 for loans to apiculturists whose honey-yielding crops were poor in the previous year.

Apiculture is most flourishing in Viatka and Perm, followed by Kazan, Kostroma, and Kief. The real advance in the industry among both the landowners and the peasants of the first two Provinces is attributable to the activity of the apicultural societies. The Kungarskoye Society has a well-arranged museum, a model experimental apiary, a workshop for the construction of hives, and various other facilities, with two instructors. The initiative and example of this society has been followed by nearly all the zemstvos of Viatka and Perm, which also have instructors in apiculture. American frame hives of the Langstroth-Dadant type are rapidly replacing the old log and straw hives.

In the Province of Kazan apiculture has an industrial character, and the same is true of the Province of Kostroma, in some of the counties of which nearly all of the apiaries are equipped entirely with frame hives. The number of colonies in the latter Province reaches 100,000. Adjoining the zemstvo apiary in the city of Kostroma is a school of apiculture with more than 100 pupils, most of whom are peasants. Statistics credit the Province of Kief with 238,000 colonies, but there are probably more. Most of the hives used there are of the old type. The 12 counties of Voronezh Province have more than 12,000 apiaries, most of which are owned by the peasants and are very well kept. Of the 4,000 persons engaged in apiculture in Moscow Province 90 per cent are peasants.

The other Provinces of Russia and the Polish Provinces have not shown as great advancement in this industry, but the zemstvos are working hard to improve conditions. In southern Russia apiculture is a favorite occupation of small landowners and the working classes, who are assisted by the Government, the zemstvos, and some of the apicultural societies. Most of the zemstvos in that region maintain warehouses of agricultural accessories, and peasants beginning bee-keeping are supplied with one or two good hives, either free of charge or at low prices on the installment plan. The ordinary peasant can obtain all the literature at hand upon the subject of bee culture for almost nothing, while the poorest are supplied free of charge.

The Government and the zemstvo organizations have established schools of apiculture at Warsaw, St. Petersburg, Moscow, and other cities, and have introduced courses in some of the agricultural schools. They also maintain staffs of instructors who are sent to various points to give instruction to those interested in the work and to assist the teachers.

TRADE JOURNALS.

Among the various journals devoted to apiculture that are published in Russia are the following: At Kief, "Pchelovdny Mir"; at Ekaterinoslav, "Pchela" and "Pchelovednoye Hosiastvo"; at Viatka, "Pchelovdnaya Jeesn" and "Pcheloved"; at Moscow, "Russky Pchelovodny Listok"; at Kazan, "Journal Kazanskavo Obshtestva Pchelovodstva"; at Yaransk, "Yaranskoye Pchelovodstvo"; and at Novocherkask, "Stepnoye Pchelovodstvo."

FORESTS, FISHERIES, AND FUR TRADE.

FORESTS.

Russia now occupies first place among the nations of the world in the extent of its timber resources, the value and quality of two-thirds of which are practically unknown. The total area of the Empire is about one-seventh of the land surface of the globe, and 39 per cent of it is under forests. Those in European Russia cover an area of 474,000,000 acres; in Finland, 50,500,000 acres; in Poland, 6,700,000 acres; and in the Caucasus, 18,600,000 acres; a total of 549,800,000 acres, exclusive of Siberia. In the Ural Provinces, forests cover 70 per cent of the area, in the northern Provinces 68 per cent, and in the four lake Provinces 57 per cent. It is estimated that in western Siberia alone there are 465,000,000 acres of virgin forest, and eastern Siberia, while not so richly endowed, has sufficient timber to supply the world's demand for years to come.

The Government owns 285,598,941 acres of forest land in European Russia, 12,826,387 acres in the Caucasus, 360,519,435 acres in Asiatic Russia, and 288,742,000 acres in the Amur region, a total of 947,686,763 acres. Twenty-three per cent of the forest land belonged to landed proprietors and 9 per cent to the peasantry in 1910.

The State forests in 1907 yielded 1,286,560,000 cubic feet of lumber, the Department of Forestry realizing for the sale of timber, rent of lands, etc., roundly, $31,500,000. Its expenditures, including $800,000 for cutting trees and sawing logs, amounted to $6,500,000, leaving a profit to the State of $25,000,000. Dealers bought $30,000,000 worth of this timber on the stump, the greater part of which was exported as logs, pit props, and other semimanufactured forms.

The forests throughout central Russia are being exhausted and the lumbermen are now beginning to devote their attention to the forests of northern Russia, which have not as yet been touched. There is a tendency among Russian lumber companies, both the new ones and those which have been in operation for some time, to combine for the regulation of the trade. Such an organization already exists among the Finns.

SIBERIAN TIMBER LANDS—FORESTRY REGULATIONS.

The principal timber lands of eastern Siberia are in the valleys of the Amur River system, which cover an area of about 2,000,000 square miles. Of this area, only about 400,000 miles is considered available for timbering, but according to local calculations, allowing 45 merchantable trees to the acre, this would give some 11,520,000,000 trees. As the time required for these trees to mature is placed at 100 years, 115,200,000 trees could be cut per annum without diminishing the forests, with proper reforestration methods.

The Amur River system is navigable for about 8,000 miles and the total length of the various streams suitable for rafting purposes would raise this to 30,000 or 35,000 miles.

In the southern part of Amur Province, both deciduous and coniferous trees are found, while in the northern part most of the forests are coniferous. Being Government property, the forests are managed by a local office of the Department of Domain, with a head office in Khabarofsk. The Government collects a tax on the cubic content of the logs sold, this tax ranging from one-half to 7 cents per cubic foot, according to the importance of the forest, size, kind, and form of timber, distance from the market, and means of transportation.

The right to take out timber is obtained: (1) On felling tickets secured from the local forest officials for a small number of trees at a fixed rate; (2) by contract to the highest bidder on a public tender at either Khabarofsk or Vladivostok, the terms and conditions of which are published previously; (3) concession rights. The public tenders and concessions generally call for a money deposit and make some restrictions on the labor employed. Up to 1907 no foreign capital was employed in timbering in the Amur region, but in that year rights were granted to an Australian firm.

The Amur district has practically only Nikolaiefsk as a harbor, and the bar at the mouth there is passable only for vessels drawing not more than 16 feet. The navigation season there is short. The Ussuri district ships timber by rail to Vladivostok, and the Sungari district also uses the railroad to transport timber and firewood to Harbin and Vladivostok. A sawmill on the Bikin River supplies the Khabarofsk military demand.

Timbering on the Amur is in its infancy. In most places the forest is either directly on the river banks or from 1 to 3 miles from the main stream and its tributaries. There are several sawmills between Khabarofsk and Lake Kisi, all operated on a small scale.

The timber areas of Siberia are now being rapidly exploited, together with the fisheries, particularly by foreign capitalists. The Forestry Department places the total timber land in Siberia at 810,000,000 acres, of which two-thirds can be successfully placed on the market. With the present population of Siberia, this is 43.2 acres per capita, while from 1 to 3 acres is considered sufficient. A correct system of management of the forests, which is a question of the near future, and the organization of the sale of timber, which is closely related to the creation of railways and waterways connecting Siberia with the markets of western Europe, will make possible a great increase in the timber output. A well-known French investigator says the timber wealth of Siberia is so great that with correct exploitation it will suffice for the requirements of western Europe for generations to come. The Russian Committee for Colonization has worked out a plan for the cutting of timber on a large scale, but this is a question for the future.

LARGE DEMAND FOR WOOD PRODUCTS.

The general industrial activity of 1912 increased the demand for timber in Russia in both the markets and the producing regions. The supplies remaining from the preceding year were limited and

the amount of timber delivered to the markets during the navigation season was not great. Prices continued firm, with a tendency to rise. Laborers' wages and freight rates were increased, but the profits of the lumbermen continued to increase and attracted capital to the industry. Mild weather and the absence of sledge roads hindered the transportation of lumber and about 20 per cent of the cut remained in the forests.

A scarcity of wood for fuel was particularly felt in the autumn, and the prices of this class of wood were increased by both the high price of naphtha and the increasing demand for cellulose for the manufacture of paper. The latter demand was particularly strong from the foreign markets. Activity in railway construction caused a brisk demand for ties and it was often found profitable to cut up large beams for this purpose. The requirements of the factories making veneers and parquet flooring caused the prices of hardwood to rise. The number of these factories has recently increased, on account of the growing demand for these products, both in Russia and abroad. The exports of raw and partly-manufactured wood from European Russia during 1912 were valued at $78,533,000, as against $72,927,000 during 1911 and $70,994,000 in 1910.

The shipments of cellulose from Russia have been on the increase during recent years, and the exports of planks and beams have shown a smaller gain. The exports of logs have decreased considerably. England, France, Germany, Belgium, the Netherlands, and Italy all increased their purchases of Russian wood products.

MANUFACTURE OF "SEG."

"Seg" (Russian "motchalo"), the inner bark of the lime or linden tree, is used for manufacturing mats, crude shoes worn by the peasants, and various other articles, especially baskets used by grocers and butchers for carrying supplies. The inner bark of the tree is stripped by the peasants in the early spring, when the sap is rising and the bark is elastic and easily torn from the trees. Great care is necessary to prevent the total destruction of the tree, and the forests are said to be gradually being decimated by the lack of care by the gatherers. The bark is woven into mats by the peasants on primitive looms and also in factories in nearly all the provinces where the lime tree grows, especially in the city of Serpukhov. Seg is produced in central, northern, and eastern European Russia, particularly in the Governments of Ufa, Perm, Vyatka, Vladimir, Nizhni Novgorod, Moscow, Tula, Ryazan, and Vologda.

The gathering and manufacturing of the fiber is carried on entirely by peasants and is practically one of the peasant home industries Thousands of peasants are employed, especially in the winter months, after the fiber has been collected and dried. The work is exceedingly hard, and it is stated that the average peasant working 13 or 14 hours a day makes about 7 kopecks (3½ cents). Labor for this class of work is becoming scarcer each year, and the price of labor will probably rise gradually, so that with the destruction of the forests the production of seg has now reached about its maximum.

FISHERIES.

Russia possesses great fishing areas, both in European Russia and on the Russian coast of the Pacific Ocean, but experiences each year a shortage of fish and fish products, to such an extent that fish take first place among the country's imports of food supplies. In 1912 these imports were valued at more than $17,600,000. The domestic supply in European Russia is insufficient for the increasing population, and the means of transporting fish from Siberia have not been developed far enough to permit that region to supply the market. The greater part of European Russia's imports of fish consists of herring, and the Russian Pacific coast abounds with a type of this fish similar to that imported from Scotland. These fish have been ignored by the Russian fishers, who have centered their attention on the various varieties of salmon, but recent experiments in pickling these herring according to the Scotch system, undertaken by one of the principal fishery proprietors of Siberia, who brought out experts from Scotland, have given excellent results. The Pacific coast herrings that have appeared on the interior markets brought the same prices as the Scotch product.

The weather during the spring and autumn of 1912 was unfavorable. The late spring necessitated the petitioning for the prolongation of the fishing season, and the cold, stormy weather kept the Russian fishermen from venturing far from shore, and also prevented the fish from coming to the rivers to spawn. Nevertheless, the catch of fish in the Volga River and the Caspian, Black, and Azof Seas in 1912 was greater than in 1911. In the Caspian district alone, including the tributary rivers, it amounted to 1,080,000,000 pounds, valued at $35,000,000.

CATCH IN EUROPEAN RUSSIA.

Ketch herring catching began in February and from 300,000 to 500,000 were caught per day, bringing an average price of $30 per thousand. In the Caspian Sea the spring fishing season began two weeks later than usual. Only small numbers of herring and larger fish, sturgeon, etc., were caught at first, but by the beginning of May herring were plentiful. About 600,000 fish per day were caught in the Sinemorsk district, of which 30 to 40 per cent were "zalom."

The size of the catch can be most easily judged from the number of fish brought to the distributing markets. Astrakhan was supplied with the following amounts per day: Sinemorsk herring, 1,600,000; "pussnok," 1,200,000; zalom, up to 100,000; vobla, 1,000,000; various slightly-salted fish (malosol) brought to Kutuma and different ports up to 720,000 pounds. About 20,000,000 vobla were smoked, including 5,000,000 of large size from Salian and Persia.

The result of the autumn fishing season was unsatisfactory. In only a few of the Volga and Caspian districts were large quantities of herring and vobla caught. In most of the fishing districts, the catch was below the average. The fishing season closed early on account of the cold weather and storms.

The first half of the fishing season on the Murman coast of the Arctic Ocean passed under unfavorable circumstances, especially as

the Pomors (Russians living on the Murman coast) have only primitive fishing tackle, and are therefore unable to fish far from the shore.

While the season on the Ural River was better, it was still unsatisfactory, and the quality of the fish was not high. Sandre were caught in the upper river and carp in the lower; vobla and bream were not found. The take of salmon was unsatisfactory in the White Sea, especially in the Kem and Oneiga districts. Flounders and borse were abundant in the Soroka district.

FISH TRADE AND IMPORTS.

Trading was animated at the beginning of the year, but later the unsatisfactory catch caused a rise in prices and the demand diminished. The second half of the year was quiet. Dealers were not prepared for the early closing of navigation which occurred. Long periods of warm weather, with short intervals of frost made it difficult to transport goods and injured their quality. Several Roumanian consignments were spoiled and consequently the traders refused to accept them. The herring market became firmer, owing to unsatisfactory catches in Scotland, Holland, and Germany. Business was dull at the Margaritinski fair. The lack of cold-storage facilities and refrigerator cars was greatly felt, as the market was forced to depend entirely on the weather.

GOOD OYSTERS SCARCE IN RUSSIA.

Oysters are grown in large quantities in the Black Sea and its tributaries, but they are small. The provincial cities have few, if any, oyster houses where oysters may be purchased in season, either at retail or wholesale, Moscow, with over 1,500,000 people, having less than half a dozen places where they may be secured. Only the leading hotels and restaurants serve oysters when called for. In both the stores and eating places they are sold by tens, rather than by the dozen or quart. Ten Black Sea oysters, averaging not larger than the end of one's thumb, cost 1 ruble ($0.515) at the store in Moscow. Crackers are also expensive in Russia, so that a small stew made at home would cost about 75 cents, while in a restaurant it would cost $1.50.

Ostend oysters, selling for 12½ cents apiece at the oyster houses, are preferred by the wealthier Russians, and in the restaurants these bivalves served on the shell bring from $1.80 up for 10. The impression that Russians do not care for oysters or other sea food served from the shell is undoubtedly due to their inability to get satisfactory products at reasonable prices.

The lack of refrigerating facilities has retarded the extension of the oyster industry. The Black Sea oysters are delivered in Moscow in about two and one-half days from the port of shipment. They are always sent in the shell, and about 50 per cent of them are dead when sold. During the winter, the oysters are frozen in the shell, but even then there is danger in eating them and cases of poisoning are reported.

Ostend oysters are also handled exclusively in the shell, but are kept in only two or three fancy groceries in Moscow. No oysters in bulk are sold in Russia; a very few stores handle American canned

oysters, but the demand for these is so small that danger enters into their sale on account of the length of time that they are kept on the shelves. This class of goods is called for only by foreigners, chiefly Americans. The writer ordered half a dozen tins from Riga, where it was understood that the oysters were freshly imported from the United States, but they were found to be dangerously old. They cost, delivered at Moscow, 51½ cents a tin—for stock that may be bought in the United States for 7 to 10 cents a can.

A service resembling that of the American express is to be found on all Russian railways, but refrigerator cars are to be had only in the faster freights. Refrigerator cars are built principally for the transportation of butter, eggs, and game from Siberia, and therefore few are to be found on the other railways. Nevertheless, it is thought that American tinned oysters could be handled to advantage in the coast cities, and perhaps transported as far inland as Moscow, the distance between this city and St. Petersburg being about 12 hours by passenger trains. The freight on oysters from St. Petersburg to Moscow is 38 cents per 36 pounds. The most serious barrier that is encountered in Russia is the tariff of $5.15 per pood, or about 14 cents a pound, on canned oysters. The import duty on oysters in the shell is $2.78 a pood, or slightly less than 8 cents a pound.

WIDER MARKET FOR SIBERIAN FISH.

A much wider field for the extensive fisheries of Siberia is opened up by the establishment of rail and water communications between the interior markets and northern Siberia. The present total of 180,000,000 pounds of fish supplied annually by Siberia is small in comparison with the great potential trade, but shows a considerable increase over 1906, when the catch was estimated at 50,400,000 pounds. Factories are being constructed for the production of canned and pickled fish products, and the utilization of fish scales. Stock companies and agencies are being established, and a considerable amount of capital is being invested in the various enterprises. The establishment of an extensive chain of refrigerating plants is being actively considered, and direct communication with foreign markets is being established.

The salmon is the most important fish for the Pacific coast fisheries, and the catch is increasing annually, rising from 57,600 short tons in 1907 to 155,473 short tons in 1911. The catch is increasing in the sea sections, but falling off in the Nikolaiefsk district, on account of the exhaustive catches of previous years, and the development of the sea fisheries. Next in importance are herring, which are caught only in the sea fisheries and are almost entirely used for the production of fertilizers in Japan. The catch of herring increased from 9,000,000 fish in 1909 to 53,000,000 in 1911.

Of a total of 123,863 short tons of fish prepared for sale in 1911, approximately 27,000 tons were destined for the Russian market and 95,400 for Japan. In 1912 only 37 per cent of the total output of the fisheries in the Nikolaiefsk district was exported to Japan, the rest going to Russian markets.

The Amur fisheries are the most prominent in the Russian Far East, not only on account of their size, but because the welfare of the native and Russian population of that region depends on the catch. In the lower Amur fish form the principal and cheap food of

the inhabitants, as well as filling the commercial position occupied by grain in the agricultural districts. Salmon is the principal fish caught, with sturgeon next in importance, although about 50 varieties are caught. The fisheries controlled by organized capital are concentrated near the mouth of the river, while the peasants and natives who fish for commercial purposes and for home consumption operate farther upstream and along the tributaries. It is only in the last few years that the industry has been properly equipped with substantial buildings, cold-storage facilities, ice cellars, and canneries. The exhaustion of many of the European fishing stations has forced the fishermen to seek new waters, and eastern Siberia has attracted many from the White, Black, and Caspian Seas, with the result that new methods and capital have been introduced. The principal drawbacks at present are the lack of organized banking facilities, high railway freight rates, and the absence of good Russian labor.

In 1907 two companies made an attempt to introduce frozen Siberian fish into the European market. As far as the quality of the fish and the prices obtained in Europe were concerned, everything was satisfactory, but the enterprise as a whole proved a financial failure, as the cost of upkeep of refrigerating steamers, the uncertainty of the run of the fish, and the difficulty of providing large steamers with a full cargo from one place showed that the business had been conducted on a wrong basis, and until cold-storage plants are built in various places where fish can be accumulated and held ready for shipment there will be no guaranty of a commercial success in any venture to export frozen fish.

FISHERIES OF THE AMUR.

The Amur fishing region is made up of the Nikolaiefsk, Chnirahsky, Pronga, and Sakhalin districts. The Nikolaiefsk district consists of 22 fishing stations belonging to the municipality of Nikolaiefsk and 35 belonging to the Department of Domains. The shore line is about 230 miles and the rental income in 1908 amounted to $79,587 for the municipal stations and $90,551 for those belonging to the Department of Domains. Next in importance is the Chnirahsky district, and the principal fisheries are located within its boundaries. The following table shows the catch of salmon in the four districts during 1908:

Districts.	Number of fish caught.		
	Spring.	Summer.	Autumn.
Nikolaiefsk	.....	7,464,896	4,685,480
Chnirahsky	60,000	873,000	2,662,000
Pronga	1,067,000	316,950	665,500
Sakhalin	666,000	635,000	748,000
Total	1,793,000	9,289,846	8,760,980

The catch of "keta" in the Nikolaiefsk district during the summer and autumn of 1912 was inferior to that of 1911. There was formerly no demand for keta caviar, and the roes were thrown back

into the river, but such a demand for this product has recently developed that it is now the chief product and is speculated in on the exchange. The supply of keta is diminishing, while the demand for keta caviar in European Russia and in Siberia is growing, so that prices are rising. The catch of keta in the Iman district is reported as having been good. Local tradesmen say that a heavy wind prevented the catching of these fish in the estuary of the Amur, and they entered the river in large shoals. When the keta first appeared in the Iman district, they brought $10 to $11 per 100, but later the price dropped to $5 per 100.

The fisheries of the Ussuri River, a tributary to the Amur, are controlled almost entirely by the local peasants, cossacks, and natives, who work individually and with primitive methods. No accurate information or statistics for this region can be obtained, but it is roughly estimated that about 2,000,000 fish are caught annually. The improvements in the fishing stations on the lower Amur River have had a marked influence on the size of the catch in the Ussuri River, the catch in the latter stream not only decreasing but being of poorer quality, as the fish are usually bruised from breaking through the numerous nets and traps on their way upstream. The price of fresh salmon in the neighborhood of Iman varies from $4 to $7.50 per 100 fish.

TREPANG AND HERRING.

Trepang is found on rock bottoms along the coast of the Ussuri district, the chief fisheries being in Peter the Great Bay and the neighboring islands. The industry is in the hands of Chinese, who either spear the trepang with a pole about 21 feet long having a wooden head with prongs bearing harpoon-like hooks about 3 inches long, or with nets fastened to special iron frames. The trepang lives at a depth of 14 to 70 feet and reaches its full size when about 3 years old. The fishing seasons extend from the end of March to June and from the middle of September to October. The average catch per fisherman is about 120 trepang per day, weighing together about 6 pounds when dried. The price in China, the chief market, averages from 33 to 51 cents per pound. The preparation of the trepang consists of opening the body and removing the viscera, boiling, salting, boiling when salted, sun and wind drying, and mixing with charcoal.

The most important fish in Peter the Great Bay is herring, the catch amounting to more than 10,000,000 fish per annum, most of which are sold at low prices in Japan for fertilizer. These fish run three times a year, in the autumn, winter, and spring, but the autumn run does not always take place. The winter herring are caught exclusively in the northern part of Amur Bay, and are of high quality, particularly at the beginning of the run. The early fish are firm and fat, and very good for salting, but the local demand is generally so great that the entire catch is sold fresh or frozen. During January and February the price for these fish averages $30 per thousand, during the first part of March about $15, and in the latter part of March $7.50 to $8.50 per thousand. The winter catch is sold to Nikolsk-Ussurisk, Harbin, and Chita, and the March

catch is generally sold in Japan and Shanghai, China, being shipped frozen, packed in burlap bags. The spring runs in Ussuri Bay begin about the end of March and later, when the ice has disappeared, the fish appear in Vostok and American Bays. The run in the western part of Peter the Great Bay begins four or five days later than in Ussuri Bay. The spring herring is salted in the western part of Peter the Great Bay, and only a small amount is sold fresh in Vladivostok. Large quantities are made into fertilizer. At the end of April and the beginning of May the increased catch brings prices down to about 15 cents per thousand fish, which does not cover running expenses. The herring fisheries are not yet established on a commercial basis, but with proper cold-storage facilities, etc., they could be developed into an important industry.

OTHER FISH AND FISHING REGIONS.

Smelt and dorse are caught with winter herring; also during April large quantities are caught in Amur Bay. They are usually sun-dried and exported to China and Chosen (Korea). Fishing for flounders was started in 1909 by about 22 small boats on the Amur and Ussuri Bays, each boat catching up to 3,000 fish in two or three days. These fish sell for 2½ cents each. Mackerel were caught in the latter part of May and in June, 1910, principally in Amur Bay, and brought 7½ to 12½ cents for fresh and 17½ to 20 cents for smoked. Fishing for sea kale, crabs, shrimps, and trepang is at present concentrated in Peter the Great Bay. Fishing for crabs has developed rapidly, the total catch in 1910 amounting to 140,000 crabs, which sold at 15 to 35 cents each.

Lake Rinka is well stocked with fish of many varieties, but the almost total absence of roads from the lake to the market and the unsettled question of the ownership of the lake shore are obstacles in the way of its development which give its fisheries a far less important position than they should occupy. The annual catch amounts to about 2,000,000 fish, valued at $60,000, and in addition to this the natives catch for their own use and for sale fish to the value of about $50,000.

Up to 1890 the immense fisheries of Kamchatka remained undeveloped and were used only to provide food for the local population. The Japanese first exploited these fisheries, exporting fish obtained by purchase or caught by themselves without licenses. The Russians then made an attempt to protect the fisheries, but the bulk of the fishing remained in Japanese hands. In 1910 the Japanese obtained 84 stations and the Russians only 2, and it is estimated that the Japanese fishers caught 32,300 tons of fish, valued at $1,500,000.

In addition to the varieties of salmon found in the Amur River, the king salmon is found in Kamchatka. This is a larger and better variety and commands higher prices. American schooners formerly visited the waters of this region to catch cod, but since the cessation of these visits this class of fishing has been abandoned.

The Anadir district is richer in fish than the southern districts of eastern Siberia. Pike, grayling, dorse, malma, and many other varieties are found in addition to salmon, but they have not been commercially exploited. The natives depend principally on fish

for their sustenance and a poor catch would mean starvation. The chief commercial fisheries are concentrated near the Anadir River.

REGULATIONS GOVERNING SIBERIAN FISHERIES.

The growth of the fishing industry of eastern Siberia has been so recent and so rapid that the laws and regulations governing it, which are the same as those in force in European Russia, were found not to be adaptable to the Siberian situation. To encourage and properly control fishing, therefore, the local authorities were obliged to issue temporary rules and regulations to cover local conditions. These regulations vary for different localities.

On the Amur River, within the boundaries of the Nikolaiefsk, Mariensk, and Khabarovsk districts, the fishing stations are leased by public auction to the highest bidder, some on a long-term basis, and others for only one year. At stations above the city of Nikolaiefsk, within 30 miles of the Amur estuary, and farther, no foreign labor is allowed. Below the city of Nikolaiefsk foreign labor can be employed to handle the fish on shore, but the actual fishing can be done only by Russian subjects.

Along the entire seacoast of the Russian Far East, by virtue of the Russo-Japanese convention of 1907, concluded for 12 years, Japanese are permitted to engage in fishing on equal terms with Russians. In such sections there is no restriction on the nationality of the laborers employed or the method of preparing the fish, except that the manufacture of fish manure from salmon is prohibited.

Fishing rights in the gulfs and bays not included in the Russo-Japanese convention, such as Peter the Great Bay, Imperial Harbor, Venina Bay, Avatchinsk Bay, and others, as well as the rivers of Okhotsk and Kamchatka, are granted by the Governor General, without public tenders, to persons of good repute, for one year only. If the concessionaires show their ability to establish a successful fishing station, a lease for 12 years can be secured on a royalty of $2\frac{1}{2}$ cents per pood of prepared fish. These leases are granted on the condition that only Russian subjects are to be employed at the stations, and that the sailing vessels serving these stations must be under the Russian flag.

In 1908 fishing by foreigners in Peter the Great Bay was prohibited, and at present a strong guard is employed to prevent poaching. This has greatly retarded the industry in these waters, as the local fisheries were formerly in the hands of Chinese and Koreans, who were thoroughly familiar with the fishing grounds and conditions, whereas the Russians who replaced them, not being fishermen, and not knowing the conditions, met with poor returns.

Owing to its proximity Japan is by far the largest consumer of Siberian fish; and since fish is one of the principal articles of food among the Japanese the demand from that country has materially assisted the local industry. The fish exported to Japan come principally from two sources—those caught by Japanese in Siberian waters under the convention of 1907, and those caught and prepared by Russian fishermen for the Japanese market. They consist chiefly of herring and the keta and gorbusha varieties of salmon.

METHODS OF CATCHING AND PRESERVING FISH.

The fish are caught by means of weirs and nets. The weirs are of the giliak, or native type, and the Japanese type known as "ta-te-ami," which are similar in construction. The giliak type consists of a fence of willow poles and branches built from the river bank or a sand bank, extending out to the fairway and turning downstream at right angles. At the end of the second section of the fence a net is set, which is closed when 20 to 30 fish have been caught. The setting and emptying of such a net requires two men.

The Japanese net arrangement is more productive, as a draw net used in connection with a fish pond made of net or wire is used in place of the bag net used in the giliak type. When a sufficient number of fish are in the net they are driven into the pond, where they are kept alive until taken into the boats. This type of trap requires the employment of 10 to 30 men and catches thousands of fish per day.

The Japanese method of salting fish is the simplest employed in the Siberian fisheries. The fish is opened along the belly from head to tail, and the viscera and gills are removed, after which it is washed and the salt placed inside. The fish are then placed in rows on matting and covered with salt. Others rows are added until the pile is 8 or 10 feet high, when the entire lot is covered with matting and left for about seven days, after which the fish are relaid and again covered with salt. The fish are packed in matting for shipping.

By the Russian method the fish are cut down the back, the sides being held together by the belly. The roe, gills, and viscera are removed, and the fish are then washed, salted, and placed in large tanks for a week or more until they are well soaked in the brine, after which they are placed in barrels. To about 700 pounds of fish 180 pounds of salt are used. Semga salting is a more improved method and is used in preparing the fish for the European market. Selected fish are cut open along the belly, and the viscera and gills are carefully removed. Several inside cuts are made to absorb the salt better, and the fish are then washed, rubbed with brushes, and kept on ice for 24 hours. The brine is carefully prepared and very strong, and after salting the fish are placed in barrels. Kolodka is a cheaper method of salting by which the fish are half salted and half dried without being cut open, and are sold at the place of preparation for about $30 a ton.

In addition to the above methods the fresh fish as well as salted are smoked, and a crude method of preparing them, known as "youkoula," is employed when the fish are intended for the natives or their dogs. Salted fish bellies are also prepared for the Siberian market.

CAVIAR PRODUCTION.

The caviar obtained by the Caspian and Volga markets in 1912 amounted to not over 1,080,000 pounds, made up of 252,000 pounds of sturgeon caviar, 612,000 pounds of stellated sturgeon caviar, and approximately 216,000 pounds of pressed caviar. About 144,000 pounds of the last-named product were distributed among the interior markets and 36,000 pounds were exported to the Levant, England, and France. The exports of unpressed sturgeon caviar went

mainly to Germany, Austria-Hungary, and the United States; that bound for the last-named country going by way of Germany. Germany imported more than 108,000 pounds for its own consumption, while Russia consumed some 26,000 pounds. Berlin, Vienna, and the United States absorbed most of the stellated sturgeon caviar exported, and more than 360,000 pounds of that variety were consumed in Russia.

Exporters divide the caviar commercial year into three periods—winter (to the spring thaw), spring (May and June), and autumn (August to November). Most of the ordinary sturgeon caviar is exported during the autumn season, the smallest amount going out in winter. The busiest season in the shipment of stellated sturgeon caviar in 1912 was the spring, when about two-thirds of the total exports were sent out.

The ever-increasing demand and the diminishing supply of sturgeon caviar in 1907 led the fishermen of eastern Siberia to experiment with salmon roe, which had formerly been considered not only useless for human consumption, but injurious to health. It has since been demonstrated that such caviar could be made commercially profitable and of such quality that, although it can not compare with sturgeon caviar in taste, it is nevertheless a great delicacy. Experiments made in the Amur River and Kamchatka districts showed that the best caviar is obtained from fish over 4 years of age, and the King variety in Kamchatka supplies the best quality.

PREPARATION OF CAVIAR.

Black caviar is prepared from the sturgeon and gray caviar from the bieluga. Fresh caviar is light in color and contained in a membrane. It is cut out, dropped in salt water, and rubbed carefully through an iron sieve, without breaking the grain, to rid it of any refuse. It falls into a preparation of brine, and after remaining there for three or four hours is emptied into a sack. The brine gradually drains off and the caviar is then ready for consumption. For local consumption, or when it can be kept continually on ice for a few days, the slight salting is dispensed with.

Salted, or payousnaya, caviar is prepared in the same way as fresh, except that the brine is stronger and the caviar is pressed to remove the brine, after remaining one day in the draining sack. To produce good caviar the brine must be boiled and cooled. The brine is made lighter in cold weather and stronger in hot.

Red salted caviar (tarama) is produced from the fish "taran" (*Cyprimus vimba*), which is called "vobla" in Astrakhan. The roe is cut out and thrown into brine made of 9 pounds of salt and 12 drams of saltpeter to each 36 pounds of water. It is then carefully mixed, and after the refuse is cleaned off, is ready for packing in barrels. The barrels are loosely hooped for two or three days to allow the brine to drain off. For about a month this caviar is soft, but it gradually solidifies. For good results cold weather is required, and the roe must be removed from the fish the day it is caught or it is liable to become putrid. This caviar is more perishable than the black. Whole-roe red caviar is prepared from the "soudak" (sandre). It is strongly salted and carefully packed. Red fresh caviar is prepared on the Pacific coast from salmon roe, and is largely used in Russia and Japan.

Sturgeon roe is always black and is seldom falsified. It should be preserved only with pure salt, and the dearer kinds contain the least salt. One of the best varieties is called "malossol," which means "little salt." As this variety does not keep well, it is put up in tin boxes and kept in cold storage.

USE OF PRESERVATIVES.

The frequent complaints from countries importing Russian caviar about the unsatisfactory means employed for its preservation have attracted the attention of both the exporters and the Government. The Ministry of Commerce and Industries recently applied to the medical board to have an analysis made of caviar by means of a compound containing 10.82 parts of borax and 89.18 parts of salt. The employment of salicylates is forbidden by law, and persons using them are subject to trial. It is believed that if a new harmless and practical preservative is found the export trade in Russian caviar will show great development.

The caviar exporters of Astrakhan state that a preparation with boric acid or other preservatives is necessary to prevent the caviar from spoiling on the road, and that this is the only method available, as attempts at transporting caviar in a frozen state have proved utter failures.

Prof. P. I. Bakhmetyev has discovered a process by which live fish can be transported long distances and recently returned from Astrakhan, where he made experiments at the invitation of the local traders. As caviar does not stand long-distance transportation in its fresh state, the object of these experiments is to find means of transporting it inside the fish. In other words, to ship live fish, that the caviar may be taken out at the place of consumption. Refrigeration is applied to bring the fish to a state of what Prof. Bakhmetyev calls "anabiose," in which they may remain six to eight months. In this condition the fish can be loaded into railroad cars like any other goods if the temperature is maintained at the proper level. One of the Moscow railways is constructing a railway car in which the temperature will be regulated according to the requirements.

At present the experiments undertaken by Prof. Bakhmetyev in Astrakhan are progressing successfully, the new refrigerator in that town being well adapted to such trials. He has succeeded in bringing to an "anabiose" state fish 1.5 meters (4.9 feet) in length The difficulty is to determine the time required for various sizes of fish. The inventor is confident that he will be able to establish a table of rules for this process, and will return to Astrakhan to resume his experiments.

PRICES—AMERICAN IMPORTS.

Caviar quotations fluctuated considerably in 1912, as well as in the preceding year. Prices are always lowest in June and July, on account of the hot weather, which causes fish products to spoil quickly, and little business is done except on the local market and the interior towns close thereto. The following table shows the

approximate prices per pound for ordinary and stellated sturgeon during 1912, quoted for cash delivery and for delivery at a fixed future date:

	Ordinary sturgeon.		Stellated sturgeon.	
	Immediate delivery.	Future delivery.	Immediate delivery.	Future delivery.
Winter season, 1911–12	$3.42	$3.15	$2.57	$2.28
March, 1912	$3.30–3.50	$2.70–2.85	$2.15–2.28	2.00
April	2.28–2.57	2.20	1.85–2.00	.....
May	2.15–2.42	1.65–1.70	1.43–1.57	.....
June and July	1.28–1.43	.....	.....	.....
August	1.85–2.15	1.85–2.00	1.85–2.00	1.28
September	2.42–2.70	2.42–2.57	2.28–2.57	1.57
October	2.00–3.70	3.15–3.28	2.85–3.28	2.00
November	3.70–4.28	3.70–4.00	2.85–3.85	2.57
December	4.15–4.28	3.85–4.00	3.70–4.15	2.85
January, 1913	4.28–3.42	4.00–4.28	4.00–4.15	2.85

Supplies of Russian caviar have until recently reached the United States, mostly by way of German houses, the practice having been to store the caviar at Hamburg and other German cities. Now, however, goods intended for the United States are being ordered direct from Astrakhan. The United States imported from all countries caviar to the total value of $216,097 during the fiscal year ended June 30, 1912, and to the value of $127,214 during the last six months of 1912.

FUR MARKET.

SABLE AND ERMINE THE MOST COSTLY.

Russia, and particularly Siberia, is now the principal source of supply for the world's furs, the vast unsettled territories affording ermine, sable, sea otter, otter, beaver, mink, musquash (muskrat), squirrel, fox, skunk, woodchuck, marmot, badger, glutton, minever, rabbit, hare, and other skins. Ermine is the highest priced of all furs, and is found only in the northern part of the Russian Empire and Scandinavia, the finest qualities coming from Ischim and Barabinsk, Siberia. This animal becomes pure white in winter in those snow-covered regions, save for the tip of its tail, which remains black. It is trapped or shot with arrows during the winter season in order to obtain the pelt in this condition. The skins rarely measure over a foot in length, and are sold by the trappers in lots of 40, known as "timbers."

The Russian sable, while not so valuable as the ermine, is a costly fur, some skins being valued as high as $5,000 each. They range from 15 to 20 inches in length and 5 to 8 inches in breadth. In a genuine sable the outer covering of hair is especially delicate in quality and beautiful in color, having a rich blue tint, and varying from 1½ to 2½ inches in length, while the pelt is very soft but durable. The values and grades vary according to the district in which the animals are found, the highest quality coming from Yakutsk, in Siberia, the next from the Lena River, while the less valuable ones come from the lower Amur region. The Kamchatka sable is browner

than the others and is highly regarded by the Russians. Other sables are caught in Lapland.

It is estimated that 25,000 sables are annually caught in Russia, the skins being disposed of chiefly on the London market, where they are distributed for sale in Europe and the United States. The tails are utilized for artists' brushes, but many so-called sable-hair brushes are made from the tail hair of the Kolinski, or Tartar sables, which are brought in large numbers from Tartary and Siberia. The Tartar sable is a member of the squirrel family, and while the coat is a brilliant yellow in the native state, it is dyed to resemble the genuine sable and can scarcely be distinguished, in many instances, even by the most expert judges. Sable is also imitated by exporters by the use of dyed hare, rabbit, muskrat, fitch, and marmot skins, but the imposture is usually detected by reliable dealers.

OTTER, SQUIRREL, BEAVER, MUSKRAT, AND OTHER SKINS.

Sea-otter fur is highly prized in Russia, where it is used in the manufacture of caps and trimmings, coat collars, etc. The sea otter is found in Kamchatka, and is captured in large quantities by hunters and trappers. Large numbers of sea-otter furs are also imported into Russia from Canada. The Russian otter is smaller than the American, which is a prime favorite in Russia. Tiflis is a large distributing point for the Caucasus catch, as well as for wolfskins.

It has been estimated that more than 30,000,000 squirrel skins find their way from Russia each year to the markets of the world. The gray fur is in demand for cloak and coat lining and general purposes, because of its extremely light weight. Another member of the squirrel family found in eastern Siberia and regarded with even more favor than the gray variety is the blue squirrel, whose color varies from dark to light according to the season of the year. The tails are longer and bushier than those of the gray squirrels and are made into boas or used for artists' brushes.

Beaver skins, while obtained in some parts of Russia, are principally imported from North America. Beaver caps are not as much in vogue as formerly, being replaced by Persian lamb. The muskrat, or musquash as it is called in Russia, is found in large quantities along the Volga River and its tributaries, and is considered the easiest fur-bearing animal to trap. It has a delicate coat, which is sometimes made and dyed to imitate sable. The brown fur of the mink is especially suitable for muffs and neck pieces, and is much sought. It is not as commonly found in Russia as in America, and the Russian variety is considerably smaller, but it has more uniformity of color.

In commercial value the fox is surpassed only by the sable. The Russian fox has a coarser, more woolly fur than that of the Labrador variety. The silver-fox fur is in universal favor. Skunk is popular for outdoor wear, and is bought in large quantities by the upper class in the interior. Rabbit and hare skins are found in all the cheap markets, but are important commercially because of their wide use among those who can not afford high-grade skins. The fur of the white Arctic hare is often sold as genuine fox, and only an expert can detect the difference.

IMPORTANCE OF FUR FAIRS.

The richest fur regions of Siberia are the Yakutsk territory and the Kamchatka and Okhotsk Peninsulas, where sable, artic fox, and squirrel are the principal furs obtained. Near the Kamchatka Peninsula is Karaginsk Island, noted for its dark-brown and black-brown foxes. The trade in furs has largely been, and is still to a great extent, carried on through the great animal fairs. One of the largest of these is held each summer at Yakutsk, and draws fur traders from the most distant parts of Siberia. At the famous annual fair at Nizhni Novgorod the fur trade is important, and serves to fix prices to a great extent. Irbit, situated at the confluence of the Irbit and Niza Rivers, in the Province of Perm, is the seat of a great fur fair, which is held each year from about February 8 to March 10. Other fur trade centers are Kazan, whose trade is almost exclusively with the dealers from Siberia; Kiatka, near the Siberian-Chinese boundary; and Astrakhan at the mouth of the Volga, noted as the distributing point for Persian lambskins, gathered from Persia, Syria, and Bokhara. Tiflis, Kharkof, Baku, and Archangel are also important outlets for furs produced in their respective districts. London is the largest and most important fur-distributing point in international trade, followed by Leipzig.

The importance of the fairs in the fur trade of Russia is decreasing with the extension of railroads, which tends to decentralize the business. The large Russian and foreign fur dealers are gradually changing their purchases to the places of production. American fur buyers have long dealt directly with the trappers and dealers in Siberia.

SUPPLY AND PRICES.

With the increasing settlement of the country the supply of fur-bearing animals is becoming smaller, as the animals are being trapped faster than they multiply, and prices are consequently rising. At the Yakutsk fair 5,000 sable skins were sold in 1900 at $36 each, while in 1910 only 2,000 skins were listed, at $82.40 each. The sales of squirrel skins amounted to 1,200,000 pelts in 1900, at $0.10 each, and in 1910 had dropped to 75,000, at $0.39 each. The decrease was partly due to the decreased supply and partly to the lessening importance of the fair. At the Irbit fair the sales in 1912 included 4,535,000 squirrel skins. 1,500,000 rabbit, 12,250 sable, 200,000 ermine, 1,500 brown bear, 180,000 Siberian weasel, 16,500 gray wolf, 14,000 to 15,000 fox, and a number of tiger and other skins. Prices averaged 15 to 20 per cent higher than in 1910, the total sales amounting to $4,000,000, as compared with $3,500,000 in the preceding year. Only a limited quantity of sable was sold at Irbit, the rest being shipped to Moscow and exported from there. Now that there is a prohibition on the killing of sable and on trading in the furs for three years from February 1, 1913, these skins will be prized much more and their cost will be increased. The best sable sold at Irbit last year for more than $200 each. Black fox skins were scarce and sold at $100 to $500 each, and gray wolfskins brought $6 to $13 each. The long-haired tiger is still found in considerable numbers in parts

of eastern Siberia, especially in the Pri-Amur district, and the largest bears in the Altai Mountains.

At the end of 1912 the Balkan War and the European political situation had an unfavorable influence on the sale of fur goods in Moscow. September and October were favorable to the trade, but November showed unusual dullness.

The latest detailed statistics showing the exports of furs, exclusive of sheep and goat, from Russia are those for 1911, which are as follows:

Furs.	Pounds.	Value.
Hare and rabbit	2,485,283	$493,170
Wolf, fox, lynx	98,660	67,530
Otter, beaver, bear	8,378	2,881
Sable	650	63,929
All other	2,592,899	3,097,120

The exports of furs across the European frontiers alone in 1912 were valued at $4,191,600, as against $3,514,000 in 1911 and $4,043,800 in 1910.

MINING AND METALLURGY.

Russia is possessed of a vast amount of mineral wealth, which has only recently begun to be actively exploited. The greatest progress in this line, extending over a long period of years, is that shown in the petroleum fields of the Caucasus, Ural-Caspia, and Turkestan. Petroleum takes first rank in value among Russia's mineral products and gives that country second place among the oil-producing countries of the world, with approximately one-fifth of the entire output. Coal ranks second in point of value, but the present output is insufficient for the demands of the Empire, and Russia is still a considerable importer of this fuel. Russia takes first place in the production of platinum, the mines in the Ural Mountains providing nearly the entire world's supply. It ranks second in the production of asbestos and manganese ore and is among the leading nations in the production of chrome ore. Gold mining in the Urals and in Siberia dates back to the first half of the eighteenth century, but it is only within the past decade that modern methods have been employed extensively. During this period, Russia has maintained itself in fourth or fifth place in the output of gold. The mines of the Caucasus put Russia in seventh place as a producer of copper, while the asphalt deposits of Syzran, the Caucasus, and Turkestan give it the same rank in that field. In the production of iron ore, Russia ranks about eighth.

METALLURGIC INDUSTRY IN THE URALS.

Prior to the last five or six years the metallurgic industry in the Ural Mountain region was in a very poor condition. Factories were closed, some of the blast furnaces were destroyed to avoid paying the zemstvo taxes, great numbers of laborers were thrown out of work, and the total collapse of the industry was predicted. Since then, however, a general economic awakening has taken place in this section, which has been richly endowed by nature, and the completion of the railways now under construction will bring still further improvement.

One indication of the change that is taking place is the conversion of many industrial concerns into stock companies, with an attendant inflow of foreign capital, which is much needed, as want of money for its undertakings has been one of the chief weaknesses of the Ural region. The interest of foreign investors in this district has been drawn principally by the copper business.

The smelters of this region increased their output from 5,220 short tons in 1906 to 19,069 in 1912. The copper mines of the southern Ural Mountains are as yet almost untouched, but it is reported that smelters are being started there on a large scale.

The increase in platinum prices has also improved conditions in the Urals, as it supplied the mine owners with large sums of money to keep the other metallurgic works going during the critical period. The greatest factor in the development of the industries of this section will be the extension of railway facilities. This region now has about one-half mile of railway to each 100 square miles of territory.

The extension of the iron industry of the Urals is directly dependent on railway extensions, on account of the absence of deposits of good coking coal near the iron-ore deposits. Besides the great forests covering the mountains there are coal deposits in several districts and many peat fields, but the coal is not suitable for coking, and wood, which is the only other fuel used for smelting, is steadily becoming dearer. The completion of the Eastern and the Northwestern Ural lines will open up large forest territories, iron mines, and anthracite deposits, while the construction of a line through southern Siberia and the introduction of special rates for Siberian coal will open a good supply of coke to the Ural industries. When railways are extended into the southern Ural region the production of iron will be taken up in the vicinity of the famous "Magnetic Mountain," with its millions of tons of 65 per cent iron ore. In spite of the many handicaps, however, the production of cast iron in this region increased from 630,000 short tons in 1909 to 918,000 short tons in 1912.

PRECIOUS METALS.

The first discoveries of gold in the Ural Mountains were made in 1744, and in the following year gold was found in western Siberia. But the latter deposits were not worked until the opening of the nineteenth century. From the Berezov district, Government of Tomsk, mine development spread to the east and south. In eastern Siberia, gold is obtained chiefly by hand labor from the alluvial deposits and not from quartz veins, as the gold fields are so situated that the importation of machinery and apparatus is difficult and costly. Some machinery is used in the district of Angara, Amur, Zeisk, and along the coast; in some instances, in the eastern Transbaikal and the Zeisk districts, hydraulic mining is employed.

The amounts of washed gold delivered at the Government and private laboratories during recent years are shown by the following table, in avoirdupois pounds:

Years.	Ural district.	Siberian district.	Total.	Years.	Ural district.	Siberian district.	Total.
	Pounds.	*Pounds.*	*Pounds.*		*Pounds.*	*Pounds.*	*Pounds.*
1906	17,215	64,813	82,028	1909	16,756	90,679	107,435
1907	15,511	67,117	82,628	1910	17,301	101,000	118,301
1908	15,136	77,785	92,921	1911	15,984	98,678	114,662

The condition of the Russian gold-mining companies was not satisfactory in 1912. The managements of different companies state that work was delayed by labor difficulties in all of the gold-mining districts. In the Ural region work was hindered by an early frost.

The amount of gold washed in that district in 1912 was 18,761.4 pounds.

Some of the gold-mining companies increased their capital during 1912 to finance the introduction of improved technical methods and for the establishment of new concerns. Some of the increases were as follows: The Russian Gold Mining Co., $1,900,000; Lena Gold Mining Co., $2,800,000; Mongolor Co., $600,000; Central Ural Gold Mining Co., $1,500,000. The Caucasian Gold Mining Co. began operations with a capital of $500,000 in 1912, and in May the North Ural Co. (Ltd), an English concern, started work in the Berezov district of the Tobolsk Government, with a capital of $1,800,000.

FOREIGN CAPITAL INTERESTED IN RUSSIAN GOLD MINES.

French, English, Belgian, and American capitalists manifested much interest in the Russian gold mines during 1912, and a number of expeditions were sent to different gold-mining districts. According to the Belgian press, four new joint-stock companies were organized during the last months of 1912 by Belgian and French capitalists to operate in Russia. A syndicate to finance gold-mining companies has also been organized. The attention of the organizers is directed chiefly toward the Amur district.

The Kommersant comments on the Russian gold-mining industry as follows:

> During 1912 the amount of gold washed was 10 per cent less than was estimated. The reason thereof is, on the one hand, the decrease of gold washed at the Lenski fields, and on the other, the exaggerated estimates of some of the south Ural fields.
>
> Most of the gold comes from Siberia, the same as before, especially from eastern Siberia, but the chemical quality of the Siberian gold is considerably inferior to that of the Urals. In Siberia, gold-bearing ore is mostly treated in the mechanical way, which does not free platinum, silver, iridium, and other metals which are found with the gold The quality of the principal metal is therefore lower.
>
> In the meantime, several of the larger gold-mining concerns of the Urals have adopted the chemical process of washing gold, using prussic acid, by which pure gold is obtained. This fact is closely related to the consolidation of the Ural gold fields. During a comparatively short time many minor concerns, partly of a "kustari" (peasant) character, have disappeared and their gold fields have gone over to capitalistic organizations.
>
> By the chemical method many mining concerns are able to obtain, besides the gold, different valuable metals, such as wolfram, ossmium, tantalum, and iridium, which are much in demand now for manufacturing electric lamps. It is also planned to organize works in Ekaterinburg for the purpose of manufacturing tantalum filaments for electric lamps.

UNDEVELOPED GOLD DEPOSITS IN SIBERIA.

The richest mines in eastern Siberia are located in the cabinet lands of the Transbaikal Province and in the Government lands of the Lena River basin. Many important gold mines are operated by the administration of these lands, and the Government offers full opportunities to foreigners who wish to engage in mining operations there. As in other parts of eastern Siberia, the mining methods are primitive, the cost of operation being high and the gold-saving process poor. American mining machinery can be used successfully in the Russian gold fields and American dredges are regarded as the best adapted to Russian conditions. Their sale requires adequate instructions in Russian for the use of the equipment.

Notwithstanding the great mineral wealth of Yakutsk Province, the mining industry there is in its infancy. There are rich deposits of gold, silver, zinc, and platinum, and the natives living near the

Maya River have been known to use the last-named metal for bullets. Iron has been found in several parts of the Province, and copper exists near the mouth of the Kolin River. Deposits of cinnabar are found along the Amga River, and there are rich deposits of coal and salt in several places. The coal fields on the Lena River extend from 66 miles south of Yakutsk for about 1,200 miles in a northerly direction.

DECLINE AND REVIVAL OF SILVER MINING.

Silver mining in Russia reached its zenith in 1887, when the production amounted to 33,800 pounds. The output then diminished steadily until 1901, when it totaled 2,407.8 pounds. A slight gain followed, succeeded by another decline, and then in 1909 and 1910 there was a revival. The greatest part of Russia's silver output comes from the Urals, the amount now obtained from the Altai district being insignificant. In 1909 the silver produced amounted to 22,824 pounds, of which 16,236 pounds came from the Urals, 5,580 pounds from the Caucasus, and 1,008 pounds from the Altai district. The production in 1910 totaled 19,476 pounds, divided as follows: Ural Mountains, 13,356; Caucasus, 5,508; Altai, 612.

URAL MOUNTAINS SUPPLY WORLD'S PLATINUM.

The bulk of the world's platinum is obtained from the alluvial deposits in the Ural Mountains, where many dredges are employed. Few changes were observed in the Russian platinum market during the past year. The consolidation of mining companies which is taking place in the platinum business had a satisfactory effect on the methods used for obtaining the metal. The effects of the crisis of 1907 have disappeared. Prices were firm during the entire year, about 10.50 rubles per zolotnik ($39.43 per troy ounce), with slight fluctuations. The total production in the Ural region was approximately 177,600 troy ounces, divided by districts as follows: South Ekaterinburg, 1,377.9 ounces; North Ekaterinburg, 0.5 ounce; Tcherdynsk, 6,166.7 ounces; Perm, 38,708 ounces; North Verkhotur, 13,065.5 ounces; South Verkhotur, 118,281.5 ounces. This is a decrease of 8,017 ounces from the 1911 production. The output of the South Verkhotur region decreased by some 2,838 ounces, this decrease being more than accounted for by the falling off in the production of the fields of the Nizhni-Tagilsk works, which are rented by the Platinum Industry Co. from a joint-stock company. In the Nizhni-Turinsk district, the center of the platinum industry, the output was 66,352 ounces, or 4,078 ounces more than in 1911. The neighboring North Verkhotur mountain district produced 1,686 ounces more in 1912 than in the preceding year. Other increases occurred in the fields of the Nicholas Pavdinsk Joint-Stock Co., and in those of Abamelek-Lazerev, in the Solikamsk district. The output of the fields of Count Shuvalov, Perm district, and of the private fields in the Lialinsk district decreased. The price was considered high throughout the year, and the exhaustion of the old fields is given as a possible reason for the decreased production. The lowest price recorded in the Ural fields was that paid in 1902, when the production was the highest ever recorded.

The following table shows the platinum output of the Ural region for the last 11 years (fractions of a funt omitted in converting):

Years.	Troy ounces.[1]	Years.	Troy ounces.[1]	Years.	Troy ounces.[1]
1902	197,275	1906	185,767	1910	176,209
1903	193,220	1907	173,180	1911	185,609
1904	161,278	1908	156,998	1912	177,591
1905	168,427	1909	164,595		

[1] The equivalents used in converting the quantities of platinum from the Russian weights are as follows: 1 doli = 0.00142867 troy ounce; 96 doli = 1 zolotnik = 0.137152 troy ounce; 96 zolotnik = 1 funt = 13.166592 troy ounces; 40 funts = 1 pood = 526.66368 troy ounces.

COPPER, IRON, AND MANGANESE.

Copper is found in the Ural Mountains, the Kirghiz Steppe, Altai, eastern and western Siberia, Turkestan, Finland, Poland, and the Caucasus. The mines of the Urals and the Caucasus produce the greater part of the copper, as shown by the following table of production during 1910, 1911, and 1912:

Districts.	1910	1911	1912
	Tons.	*Tons.*	*Tons.*
Ural	10,188	14,562	19,854
Caucasus	8,478	8,586	10,368
Altai	63	31	.....
Siberia	3,528	4,104	5,292
Chemical factories	1,026	1,008	1,350

The output of 36,864 tons of copper in 1912 was nearly equal to the combined imports (8,586 tons) and domestic production (28,291 tons) in the preceding year. Nevertheless, the imports of copper during 1912 amounted to more than 8,000 tons. The greatest increase in production was in the Ural district, where the chief producers were the Kishtim, Issetzky, and Sissertsky factories. The first-named works increased its output from 4,345 tons in 1911 to 8,406 tons in 1912.

Among the many branches of the Russian metal industry, the manufacture of copper is remarkable for its rapid development. Seven years ago the 10,000 tons that constituted the output of all the existing works did not meet half of the requirements of the country. Several new works were opened in 1912.

Thirty-two copper enterprises were in operation in the Caucasus during 1912, of which 15 smelted their own ores, while the rest confined their efforts to production. The combined output of these mines was about 1,303,225 tons of ore, of which about 1,200,000 tons were smelted, yielding 9,273 tons of copper. The production of the Caucasus Copper Co. at Dzansoul, near Batum, in which American capital is largely invested, was very uniform throughout the year, amounting to some 40,000 tons of ore and 3,000 tons of copper. Measures have been taken to extend the operations, and when they are completed it is expected that the output will be almost doubled.

Siemens Bros., owning copper mines at Kvartshana, in the Tchorok River basin, district of Artvin, Batum Province, plan to construct a smelting plant during 1913 with a capacity of 150 tons of ore a day.

IRON ORE RESOURCES LARGE.

Russia has vast deposits of iron ore in various parts of the Empire, from Siberia to Poland. Considerably more than half of the pig iron now produced in the Empire comes from South Russia. In its metallic content the ore of this region is reputed to be the finest in Europe. The best ores average 70 per cent pure, and the chief sources of supply are the Krivoi-Rog mines, about 100 miles inland from Nicolaief. A Government mineralogical expert some time ago estimated the ore deposits at Krivoi-Rog at about 85,000,000 tons, while other and no less expert opinion places the supply at double that amount. The Kolatchevski ore mines are little less extensive than those of Krivoi-Rog, and there are several smaller mines in the same Government of Ekaterinoslav. The alleged signs of exhaustion of the Spanish ore deposits have given the South Russian trade a marked impetus. The exportation of iron ore is prohibited except by way of the Black Sea ports, but the amount that may be sent through them is not limited. Nicolaief is the chief port of shipment, and the ore goes principally to Germany (generally by way of the Netherlands) and the United Kingdom. The United States imports considerable, although the latter shipments are decreasing. The comparatively high cost of coal from the Donetz Basin operates as a hindrance to the establishment of blast furnaces in the producing region.

RAPID PROGRESS OF RUSSIAN IRON WORKS.

The constant improvement which the Russian iron industry has enjoyed since 1909 resulted in an unprecedented record of progress in 1912. The amount of iron sold increased from 1,966,000 tons in 1908 to 2,700,000 tons in 1911, while in the first 8 months of 1912 the sales amounted to 2,066,500 tons, an increase of 260,165 tons over the corresponding period of 1911. The following table shows the dercentage of increase of sales over those of the immediately preceding year for the principal classes of iron during each of the past 4 years:

Class.	1909	1910	1911	1912
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*
Double T bars and sleepers	19.4	43.0	27.6	21.9
Large-size rails	46.1	1.1	4.5	21.0
Roof iron	26.6	5.6	5.5	3.2
Assorted metal	11.3	22.8	11.0	9.2

By increasing their production to meet the increased demand the metallurgical works reduced their supply stores from 308,335 tons on September 1, 1911, and 373,335 tons on January 1, 1912, to 295,000 tons on September 1, 1912.

The production of foundry iron, in spite of the activity of the foundries, proved insufficient to meet the demands. As a result the imports of pig iron increased from 60,670 tons in 1911 to 95,000 tons in the first eight months of 1912. A special law, passed May 31, 1911, made possible the rise in imports of this product, which totaled only 5,000 tons in 1908 and 1909, and 6,670 tons in 1910, by granting favorable import conditions. The production of pig iron increased from 2,850,000 tons in 1908 to 3,651,670 tons in 1911. The supply at the

works was 690,000 tons at the end of 1908, 708,335 tons at the end of 1909, 470,000 tons at the end of 1910, and 390,000 tons at the end of 1911. Iron prices in 1912 were steady, with a rising tendency.

TRUST CONTROL OF THE IRON OUTPUT.

The Russian iron trade is almost entirely concentrated in the hands of the "Prodamet" trust, and the orders received by that organization during the entire year of 1912 are given provisionally as totaling 1,959,806 tons. The number of orders placed in 1912 exceeded those of 1911 by 11 per cent and those of 1910 by 24 per cent. The Prodamet syndicate supplies more than 90 per cent of the native assorted iron and girders and sleepers; about 80 per cent of the trusses; 88 per cent of the sheet iron made in Russia; and all of the axles of domestic make. It also produces a large part of the iron rails used in the Empire. Thirty of the most important Russian iron works are in this syndicate. The increase in orders placed with the syndicate during the last three years is shown by the following table:

Products.	1910	1911	1912
	Tons.	*Tons.*	*Tons.*
Thick plates and sheets	170,000	225,239	267,727
Girders and sleepers	227,652	231,700	303,580
Trusses	21,134	34,648	31,700
Axles	9,300	(1)	12,555
Assorted iron	807,175	857,700	844,103
Rails	324,607	397,000	482,105

[1] Returns missing.

Negotiations with agents for different products of the syndicate were resumed in 1912. The term of the agreement for thick plate and sheet iron expired on March 1, 1912, and that for girders, assorted iron, and sleepers on January 1, 1912. The syndicate had begun negotiating with the different members in regard to these questions in 1911, and had met with difficulties. Nearly all the works had enlarged on account of the favorable condition of the market and a majority of them insisted upon larger shares of the business and profits in case the trust was prolonged for five years. As it seemed impossible to fulfill the wishes of all the parties concerned, most of the works at first declared they would agree to a temporary compromise prolonging the agreement for 18 months on the former conditions. The Briansk Works, Russian-Belgian, and Drushkovskoie metallurgical companies refused to accept these conditions, however, and during December, 1911, the state of the trust seemed precarious. At the beginning of 1912 the agreements were renewed for three years. In 1912 negotiations were carried on for the formation of a cast-iron trust. This could not be brought about, however, as an important south Russian firm refused to take part in the combination. The formation of a roof-iron trust was not considered in 1912, as all the works were busy manufacturing other articles, but it is thought this is only a question of time, and in case a crisis should occur the south Russian firms will probably combine. In 1913 the trust will have to carry on negotiations with its agents again, as the agreement as to rails, trusses, and axles terminates on January 1, 1914. According to several members of the trust the agreements will be renewed in due time.

MANGANESE PRODUCTION.

There are two great manganese districts in Russia, the richest being on the Kvirila River, in the Kutais Government of the Caucasus, and the other in the Government of Ekaterinoslav. Batum and Poti are the shipping ports for the former region, and Nicolaiefsk is the chief port for the latter. The total supply of manganese ore shipped to Europe and America from all countries during 1910, 1911, and 1912 is shown by the following table:

Country of exportation.	1910	1911	1912
Russia:	*Tons.*	*Tons.*	*Tons.*
Caucasus	637,718	574,335	852,734
Ekaterinoslav	22,592	13,888	30,673
Turkey	.....	620	850
Greece	.....	.....	4,750
Sweden	255	.....	.....
Spain	4,967	24,435	24,934
North Wales	5,586	4,658	3,677
India:			
Bombay	460,377	458,569	503,365
Calcutta	78,108	58,125	50,130
Vizagapatam	54,250	49,430	30,600
Mormugoa	102,769	90,388	63,339
Brazil	247,463	211,200	139,980
Java	992	98	705
Cape	850	.....	.....
Total	1,615,927	1,485,746	1,705,737

The decrease in exports in 1911 was due to the rise in sea freights, caused partly by the Turko-Italian War and partly by strikes, etc. Freights were 50 to 80 per cent higher than usual.

About two-thirds of the Nikopol ore is brought to the interior markets and its prices depend on the local conditions. In 1911 the Russian markets consumed 80 per cent of the Nikopol output, on account of the requirements of the southern metallurgical works. The business in that district improved and prices were higher than in the preceding year. This upward tendency continued into 1912.

INCREASE IN MANGANESE EXPORTS.

The exports of manganese ore from Russia during the first 11 months of 1912 amounted to 927,233.33 tons, as against 622,783.33 tons in the corresponding period of 1911. The latest complete figures available are those for 1911. The exports for the five years beginning with 1907, and the shipments to the principal consumers, were as follows:

Years.	From Nikopol.	From the Caucasus.	To Germany.	To England.	To Belgium.	To France.
	Long tons.	*Long tons.*	*Long tons.*	*Long tons.*	*Long tons.*	*Long tons.*
1907	86,020	493,700	241,750	177,317	1,017	25,417
1908	51,867	401,417	179,333	115,433	56,767	30,683
1909	62,250	557,150	279,650	147,183	68,133	20,167
1910	71,767	629,667	294,967	149,433	91,617	39,283
1911	49,783	600,517	300,850	128,150	67,033	49,767

COAL.

THE DONETZ AND DOMBROVSK FIELDS.

The most productive coal region of Russia is the Donetz Basin, in the Government of Ekaterinoslav, which covers an area of 16,000 square miles, the seams varying from 1 to 7 feet in thickness. There are about 200 seams of coal in the field, with a total depth of 14,000 feet. Of these from 25 to 40 are workable. The surface of the Donetz Basin is chiefly in the hands of peasants and village communities, which causes difficulties in obtaining concessions for the working of the mine.

Next in importance to the Donetz fields come those in the Dombrovsk Basin, in Poland. This region produces some 5,000,000 tons of coal a year. Coal is also mined in smaller quantities in the Ural Mountains, the Caucasus, and the Province of Moscow. The Ural fields are destined to play an important part in the industrial life of that region, as the wholesale destruction of forests there in the past few years has resulted in rising prices for wood fuel. As compared with the other coal fields of Russia the Ural district has been only slightly developed. The colleries there were opened in 1860 and yielded a few thousand tons yearly until the construction of the railway through that region in 1879, after which the annual output rose to about 250,000 tons in 1890 and 771,370 tons in 1908. In 1909 and 1910 the production fell off to 689,150 and 561,500 tons, respectively. This falling off was not due to any exhaustion of the mines, however, as it is estimated that there are millions of tons within easy distance of the surface in the Egotshinsk deposits alone. The chief user of Ural coal is the Perm Railway.

COAL IN THE CAUCASUS AND SIBERIA.

The coal deposits in Transcaucasia are of an inferior quality, and mineral oil is so largely used in that region that the output is small. The rapidly increasing population of southern and southeastern Russia, together with the small amount of forest land in that region, increases the importance of the coal fields of the Donetz Basin and the eastern and northeastern Caucasus.

Coal is found in many places in Siberia, but as yet is only exploited for local use. There is, however, a big future for the industry in that region. Wood is steadily becoming more expensive, with a resulting steady gain in the demand for coal. In the immediate vicinity of Vladivostok coal deposits are worked to a considerable extent, but the product is nearly all brown coal of a low quality. The most promising source of coal supply is probably Sakhalin, where rich deposits exist all along the western coast from near the Russo-Japanese boundary north. The coal is similar to Cardiff, and surface outcrops are visible in many places. The absence of a harbor on the west coast of the island and the consequent difficulty of shipment has been the great obstacle to successful development in the past. Researches made in Russian Sakhalin have revealed deposits estimated at 160,000,000 tons.

The chief coal deposits of Siberia are those of Eskibastus, south of Omsk, which are estimated to have 3,000,000,000 tons of coal, and the Kuznetz Basin, in the Tomsk Government.

REVIEW OF THE 1912 TRADE.

Last year proved to be an exceptional one for the coal industry of Russia, inasmuch as the demand for mineral fuel was greater than the mines, in spite of their efforts, could supply. Though the output of the mines was a record one, it is clear that it must be increased in the future to answer the requirements of the country.

The yield of the mines during 1911 and 1912 was as follows:

Districts.	1911	1912
	Tons.	*Tons.*
Donetz	21,906,000	23,544,000
Dombrovsk	6,480,000	7,110,000
Moscow (10 months)	130,000	150,000
Caucasus (10 months)	41,650	57,000
Ural (9 months)	330,000	500,000

The Donetz district increased its output only 8 per cent over that of 1911, while the increase of production in 1911 compared with that of 1910 was 21 per cent.

It must be taken into consideration that the harvesting of the crop of 1912 was terminated at a much later period than usual, and consequently the mines could not be worked to the limit until late in autumn for lack of laborers. As to increase of demand, 1912 was a continuation of 1911, and the mines could but slowly augment the output in some parts of the district.

ANTHRACITE PRODUCTION—SALES—COAL SHORTAGE.

A great increase has recently been observed in the mining of anthracite coal, while the production of bituminous has not grown as rapidly. The production of anthracite rose from 2,478,333 tons in 1910 to 3,000,000 tons in 1911, and from 2,410,000 tons in the first 10 months of the latter year to 2,833,333 tons in the first 10 months of 1912. The output of bituminous coal rose from 13,943,333 tons in the first 10 months of 1911 to 14,666,665 tons in the corresponding period of 1912. The following table shows the distribution of the coal sold from the Donetz district during the first 10 months in 1911 and 1912:

Consumers.	1911	1912	Consumers.	1911	1912
Railways:	*Long tons.*	*Long tons.*		*Long tons.*	*Long tons.*
Government	2,681,333	2,737,500	Shipping companies	185,833	219,667
Private	802,833	1,140,000	Salt mines and works	80,000	77,834
Works and factories:			Gas works	71,500	68,000
Metallurgical	2,748,665	3,117,334	Other consumers	2,867,667	3,181,667
Sugar	943,334	961,167			
Foundries	288,000	441,500			
Other factories	1,084,834	1,285,500			

The sales did not show as great increases over those of 1911 as the latter year showed over 1910, principally on account of the less intense working of the mines. A number of consumers received less

than the quantity contracted for, and were obliged to draw on their surplus supplies. The metallurgical works reduced their stores to 183,000 tons, and the railways, which held 1,135,000 tons at the beginning of the year, had cut this down to 800,000 at the end of December. The present situation therefore offers opportunity for considerable development during 1913. The situation in the Dombrovsk district was most favorable to the mines, the increase in production being less than the demand.

COAL IMPORTS—COKE OUTPUT.

Russian industries experienced a serious lack of fuel, which had to be compensated by imports of foreign coal. Through the port of St. Petersburg 2,380,000 tons were imported in 1912, as compared with 2,020,000 tons during 1911 and 1,911,600 tons in 1910. The amount of Russian coal brought to that port was not more than 40,000 tons, as compared with 160,000 tons in 1911 and 760,000 tons in 1910. The imports into Russia across the German frontier in the first 9 months of 1912 amounted to 925,000 tons, as against 855,000 tons during the same period of 1911. Under the influence of the increased demand, coal prices were steady, with a tendency to rise. Prices at the production points reached $4.50 per ton. The total imports of coal aggregated 5,510,736 tons in 1912, as against 4,952,844 tons in 1911. In consequence of the colliers' strike in England, the price of Cardiff coal in St. Petersburg rose from $7.75 per short ton to $10.52, but after two months it went down to the normal level.

Coke showed a still greater increase in cost, reaching $7 to $7.75 per ton, owing to the increased activity of the Russian metallurgical works during 1912. The output of this fuel in the Donetz district during the first 10 months of 1912 totaled 3,160,000 tons, against 2,440,000 tons for the same period of 1911. The imports of foreign coke during the first 9 months of the year were 400,000 tons, as compared with 258,350 tons for the same period in the preceding year.

PETROLEUM.

The petroleum output of Russia in 1912 amounted to approximately 68,019,200 barrels of 42 gallons each, as compared with 66,183,700 barrels in 1911, and 70,336,600 barrels in 1910. The slight increase over the preceding year is indicative of the growing importance of the new fields, as considerable decreases occurred in the output of four of the old Baku fields and the Grosny district. The Baku fields, in the western part of Transcaucasia, along the Caspian Sea, remain the chief sources of Russia's oil output, producing more than four-fifths of the total, but they are showing signs of approaching exhaustion. They are barely holding their own in spite of an increase of about 38 per cent in well-drilling activity during 1912.

The Grosny district is in the Province of Terek, north of the Caucasus Mountains, and of more recent development than that of Baku. The decrease in its output in 1912 was unexpected, as the boring of wells increased by about 66 per cent. The falling off occurred in the western section, however, where the presence of water made boring difficult. It is expected that these difficulties will be overcome in due

time, and as a number of new wells in that district will reach oil sand in the near future, the output will probably increase.

Much attention is being given to the oil deposits on the island of Tcheleken, where several large "gushers" have been brought in. The oil is found close to the surface, and drilling is inexpensive, the greatest problem at present being that of storing and shipping the oil.

The Maikop oil fields, in Kuban Province, on the western fringe of the Caucasus Mountain Range, while recognized for a number of years as having abundant stores of petroleum, only came into prominence during the latter part of 1909. It is the most favored petroleum-producing region of Europe, being only about 50 miles from Tuapse, on the Black Sea.

EXPLOITATION IN 1912.

Considerable capital was spent in 1912 in exploiting the oil fields in the Emba River basin, northeast of the Caspian Sea, and some of those interested expect great results there, maintaining that "gushers" will be brought in during 1913. Others hold that this district is not of great importance. In the Ferghana fields of Turkestan, 1912 showed a considerable increase in production.

The output of the principal Russian oil fields during 1911 and 1912 is shown by the following table:

Districts.	1911	1912	Districts.	1911	1912
	Barrels.	*Barrels.*		*Barrels.*	*Barrels.*
Baku	52,138,095	51,536,615	Maikop	952,453	1,104,442
Grosny	9,026,361	7,851,140	Ferghana	240,096	480,192
Tcheleken	1,596,639	1,440,596	Emba	.....	120,048

USE OF OIL FUEL—SUPPLIES AT DISTRIBUTING POINTS.

The increased demand for oil fuel on the part of Russian industries was the chief cause of a scarcity on the market in 1912, notwithstanding the slight increase in output. The resulting higher prices tended to influence consumers to use other fuel, but the serious condition of the fuel market and the critical position of the coal-mining industry made it difficult to substitute solid for liquid fuel. Calculations made by the Kharkof Congress indicate that about 1,764,000 short tons of coal were used in place of oil during 1912, however, as against 945,000 short tons in 1911. When navigation opened in 1912, the supplies of oil refuse in the industrial district of Baku amounted to only 175,950,000 gallons, as against 342,450,000 gallons available at the corresponding time in 1911. Therefore the quantity of oil sent to Astrakhan during the period of navigation showed a decrease of 238,500,000 gallons as compared with 1911, although the trade from Baku was energetically carried on. In addition to this shortage, the unfavorable conditions of river navigation made it impossible to export from Astrakhan such quantities of oil as would have been desirable.

The supply of oil at Astrakhan on November 1, 1912, was 318,600,000 gallons, and at the other chief distributing markets along the Volga River, 404,100,000 gallons, as compared with 424,350,000 and 496,800,000 gallons, respectively, at the corresponding time in 1911.

According to the calculations of the oil companies of Baku, the supply of oil and oil products stored throughout Russia on November 1, 1912, was 585,000,000 gallons, or 180,000,000 less than on the corresponding date in 1911.

SHIPMENTS AND EXPORTS—REFINING.

The following table shows the oil shipments from Baku during the last two years.

Products.	1911	1912	Products.	1911	1912
	Barrels.	*Barrels.*		*Barrels.*	*Barrels.*
Illuminants	10,406,454	10,639,886	Other products	1,388,776	1,875,209
Lubricants	1,999,503	2,372,605			
Residuum	26,091,096	21,961,469	Total	45,599,367	42,903,693
Crude oil	5,713,538	6,054,524			

The exports to foreign countries from Batum and Novorossisk during 1912 showed a decrease as compared with those for the preceding year, which was natural in view of the inability of the industry to supply the demand of the local market. The exports during these years were as follows:

Products.	From Novorossisk.		From Batum.	
	1911	1912	1911	1912
	Barrels.	*Barrels.*	*Barrels.*	*Barrels.*
Illuminants	473,463	314,763	2,679,788	2,487,775
Lubricants	.....	.....	1,281,638	1,341,149
Naphtha residues	.....	.....	387,011	326,067
Other products	690,719	840,441	1,874	1,218
Total	1,164,182	1,155,204	4,368,311	4,156,209

The output of oil products in Baku in 1911 and 1912 is shown by the following table, in poods of 36.11 pounds:

Products.	1911	1912	Products.	1911	1912
	Poods.	*Poods.*		*Poods.*	*Poods.*
Illuminants	87,366,200	88,678,800	Benzene	1,174,000	1,455,900
Lubricants	17,787,900	23,886,000	Paraffin	21,000	37,300
Solar oils	16,130,400	9,648,000	Other products	35,439,500	47,720,600
Residues	178,380,700	160,232,800			

CENTALIZED CONTROL OF RUSSIAN OIL FIELDS.

A number of oil companies operating in the Russian fields recently consolidated, and it is stated that there are few independent concerns now in competition with what are known as the Russian Oil Trusts. These consolidations affect not only the oil producers, but also the trade in oil.

A few of the changes and consolidations are as follows: G. M. Lianosov & Sons (Ltd.), purchased the fields of K. L. Kwarnstrem, A. D. Melikov & Co. (Ltd.), the Colchis Co., and the Naftalan Naphtha Co. This group was joined by the Moscow-Caucasian Co., the Caspian Co., and Mantashev & Co., forming a particularly strong organization, which possesses its own oil fields, works, tank fleet, sufficient railway cistern cars (under a 10-year contract with the "Vostotchnoie" Co.), and its own stores.

The Nobel group recently acquired the fields of M. A. Kalantarov, Lasarev Bros., the Vorotan Co., the Balakhansko-Sabutchinski Co., and the Petersburg-Caucasian Co. In this manner the Nobel Co. also carries on the oil business in all its branches.

A number of other concerns passed into the hands of foreign financiers without changing their status or names. All of the Rothschild oil companies, the Caspian-Black Sea Co., the Masut Co., and the Russian Standard Co., passed into the hands of the Dutch Schell-Deterling Co. The Nobel, Schell-Deterling, and Lianosov groups also control all the oil fields of Emba.

The Russian Nepht Co. has also adopted the principles of consolidation. This company formerly possessed oil fields, plenty of railway cistern cars, and a small tank fleet. It has now purchased the estate of the Ter-Akopov Co., and in this way has come to possess works of its own, has increased its fleet and its business organization, and has a greater quantity of oil at its disposal, having bought the territory of E. B. Ter-Akopov & Sons and of I. A. Mansvotov. It is stated that there are several other consolidations of different firms to be expected, and that several of the larger companies will shortly join one or another of the influential firms.

ASBESTOS.

The Ural Mountain region is the chief source of supply of Russian asbestos, but deposits of this mineral also exist in Finland, in Yenesei Province, Siberia, in the Tunkinsk district, and in 1909 some 21,668 pounds were obtained near the mouth of the Kamioushta River, a tributary of the Abakan. The Ural district is easily worked on account of the abundant supply of labor, which can be obtained for moderate wages. According to the latest information available, there are 21 asbestos mines operating in this region, their total output in 1910 being 12,203 short tons, as compared with 14,670 tons in 1909 and 13,050 tons in 1908.

It is reported that arrangements have been completed for the formation of a Russian asbestos syndicate. At present the entire Ural output is exported in the raw state, but it is the intention to erect a large plant for the purification of the raw material and the manufacture of asbestos goods. The following concerns, which control almost the entire Russian production, are reported as members of the new organization: The Kosel-Poclenski Successors Co., annual output 10,800,000 pounds; Girard de Sucanton, annual output 7,223,000 pounds; the Wosnessenski Asbestos Mines, annual production 6,211,000 pounds; the Korowo Asbestos Mines, annual output 5,417,000 pounds; the Russo-Italian Co. for Asbestos Industry, annual output 361,000 pounds; and Jakowlew Successors, annual output

361,000 pounds. The only outsider of importance is the Count Stenbok-Fermor Co., and it is believed that this concern may yet be induced to join the syndicate.

SALT.

Russia is one of the richest salt-bearing countries of the world, although up to the present time its vast resources have not been extensively exploited. Its yearly production now averages over 2,000,000 tons. The Donetz Basin is the greatest producing area, its output being about 28 per cent of the total for the country. Bakhmut, in the Ekaterinoslav Government, comes second, with 25 per cent. Baskuntchak, in Astrakhan, and the Crimea together produce about 22 per cent, while the deposits in Perm and Orenburg Provinces supply 20 per cent. It is officially stated that Orenburg Province has the richest deposits of salt in the Empire. The extent and depth of the beds have not yet been determined, but the part that has been investigated is believed to contain nearly 2,000,000,000 tons. Five great salt lakes—Boogaz, Petrovsk, Agooevsk, Artavsk, and Yassansk—situated on the western and southern boundaries of Kuban Province, are said to comprise the largest salt district in the world, but they are poorly worked and in need of organized and improved methods. Not including Siberia, Russia consumes from 2,000,000 to 2,200,000 tons of salt annually, practically all of which is of domestic origin. Of the domestic production some 500,000 tons are rock salt, 1,000,000 tons are obtained from lake bottoms, and 480,000 or 500,000 tons are produced by evaporation of brine from salt wells or underground lakes. The price paid at the works for milled lake-bottom salt ranges from 1.75 cents per pood in southeastern Russia to 8 and 10 cents in the Ural, and for salt from brine the price runs from 4 cents per pood in the Ural to 36 cents in Siberia. Table and refined salt is imported to the value of $1,000 to $2,000 per year, mostly from Germany and England, and other foreign salt is purchased to the value of about $100,000 per annum.

The latest available figures showing the production of salt in Russia from the different sources are as follows:

Years.	Salt lake deposits.	Rock salt.	Brine.	Total.
	Tons.	*Tons.*	*Tons.*	*Tons.*
1900	1,236,420	483,300	442,980	2,162,700
1903	815,220	578,700	446,620	1,836,540
1905	1,051,920	427,140	487,080	1,966,140
1907	1,056,600	494,640	446,940	1,998,180
1908	990,000	562,320	477,360	2,029,680
1909	1,420,380	583,740	484,560	2,488,680

The fluctuations in production are greatest for the salt raked from lake deposits, as the production from that source is entirely dependent on the weather. The production from the mines increases and decreases with the demand and the ease of obtaining labor. In years when the men find more profitable employment in the fields there is a reduction in the output. The salt obtained from brine is rather more expensive than the others, and the quantity produced depends on the market price and demand.

FAIRS.

Fairs occupy a prominent position in the distributive mechanism of Russia, although they are gradually losing their importance with the extension of modern means of communication, which brings producer and consumer directly into touch with one another. Formerly the annual or seasonal fairs held at the most readily accessible places under the old form of transportation afforded the only markets where the people could dispose of their products, either by barter or sale, and obtain such articles as they needed and could not themselves produce. Commerce was in the hands of general traders, and most of the fairs served only a limited region. Some of the great fairs, however, drew traders from all parts of the country and became famous as the commercial centers of the country.

The Central Statistical Committee gives the number of fairs held in Russia at present as 16,000, with an annual turnover of more than $500,000,000. Most of these fairs (87 per cent) are agricultural, and only some 10 per cent have a turnover, retail and wholesale, of $5,000 to $50,000 per annum. The great fairs, with annual turnovers of $50,000 to $500,000, form only 1 per cent of the total number, and only two of these fairs have retained their national importance. These are the annual fairs at Nizhni Novgorod and Irbit.

THE GREAT FAIR AT NIZHNI NOVGOROD.

Nizhni Novgorod owes its prominence to its position on the Volga River, which, with its tributaries, affords water communication with practically all the great producing centers of European Russia and also served in former times as part of the principal trade route to Asia. Its trade is principally in the bulky products, such as furs, cotton goods, raw hides, tanned skins, leather goods, sheepskins, glass, and glassware. Most of the large cotton manufacturers of Lodz, Poland, maintain their own stores at Nizhni Novgorod. In the international market this fair is still important, sending out large quantities of furs, and rawhides (chiefly to the United States), wool, old rubber, cloth, etc.

There is also considerable sale of manufactured goods at the Nizhni Novgorod fair. Plated goods, enameled ironware, bent-wood furniture, and boots and shoes are largely sold by Polish manufacturers, although the European Russian makers of boots and shoes are now offering strong competition in that line. Buyers come from Persia, Khiva, Afghanistan, and the Caucasus to purchase manufactures of various sorts.

The Nizhni Novgorod fair opens in July and closes about the middle of September each year. Its character is largely dependent on the harvest, and in 1912 the trading was considered as very good. There is no noticeable decline in the actual amount of business done, but the fair is gradually losing its importance, and its effect on trade

is diminishing. With the growing tendency to deal by means of samples, instead of presenting the entire stock to the customer's attention, and with the increasing facility with which manufacturers are able to reach their markets direct, the need for the fair is disappearing.

THE FUR FAIR AT IRBIT.

Irbit is near the rich northern and central Ural regions, in the heart of the fur district, and is still an important exchange center in trade between European and Asiatic Russia. About 58 per cent of its business is with European Russia and the Caucasus, 40 per cent with Siberia, and only about 2 per cent with foreign countries. Its annual turnover amounts now to some $15,000,000, while formerly it ran as high as $36,000,000. Its trade in iron, cotton, wool, tea, sugar, and similar products has practically disappeared, and the trade in manufactured goods is also on the wane, as Russian firms are opening permanent stores in Siberia. In the fur, skin, and hide trade, Irbit still occupies a leading position, and its trade in glass, glassware, ropes, cordage, and similar bulky products is still large. All the chief Russian fur companies are directly represented at the Irbit fair, as are many foreign concerns, and furs from this fair make up from 30 to 50 per cent of the fur sales on the great markets of Leipzig and London. Left-over stocks of furs from the Irbit fair are sent to Nizhni Novgorod. Considerable business is also done in metal, wood, woolen, and homemade leather goods. The Irbit fair lasts through the month of February.

MINOR FAIRS.

The annual fair held at Kief in February and March was formerly important, not for the sale of goods (its annual turnover is only some $2,500,000), but for the contracts that were made there. This fair bore some resemblance to foreign produce exchanges, and its business was principally done in sugar, spirits, wheat, seeds, agricultural produce, etc., and in the purchase, sale, and leasing of land. Bankers, manufacturers, agriculturalists, and others met at Kief during the fair to settle their outstanding accounts, and make contracts for future fulfillment. It was also customary for the stockholders of most of the sugar factories within a wide radius to assemble at Kief for their annual meetings. This fair has now lost most of its importance, however.

The enormous timber trade of Russia is still largely conducted through special fairs, of which the most important are those held at Kozmodemiansk, Kazan Government, from June to August, and at Tomel, Mohilev Government, in January. The average turnover of each of these fairs is $1,500,000 to $1,800,000.

In the hop trade the annual fairs at Warsaw (Sept. 1 to 10) and at Zhitomir (Sept. 6 to 14) are important. The turnover at the former is about $250,000 and at the latter about $50,000.

Some 5,000 horse fairs are held throughout Russia each year, the largest being at Simbirsk, with a turnover of about $75,000, and cattle fairs are held in the steppe Provinces of Voronezh, Kharkof, and the Don. From 3,000 to 15,000 head of cattle are annually sold to salters at these fairs.

ZEMSTVOS AND COOPERATIVE SOCIETIES.

One of the most interesting features of the growth of industrial and political life in Russia is the development of the zemstvos—provincial and district assemblies created on an elective basis—a type of organization which came into being with the liberation of the serfs by Alexander II in 1861.

It was found necessary to establish local government in various parts of the Empire in order to study and attend to the wants of the population, which could not be successfully done by the central Government at St. Petersburg. With this in view, the zemstvos became a permanent working body in 1864 in 34 Provinces and 1 territory of European Russia. In addition to the provincial zemstvos, there were in 1910, 365 district zemstvos, divided as follows: Bessarabia, 7; Ekaterinoslav, 8; Kasan, 12; Kaluga, 11; Kharkof, 11; Kherson, 6; Kostroma, 12; Kursk, 14; Moscow, 13; Nizhni Novgorod, 11; Novgorod, 10; Olonetz, 7; Orel, 12; Penza, 10; Perm, 12; Poltava, 16; Pskov, 8; Riazan, 12; Samara, 7; St. Petersburg, 8; Saratov, 10; Simbirsk, 8; Smolensk, 12; Taurida, 8; Tambov, 12; Tchernigov, 15; Tver, 12; Tula, 12; Ufa, 6; Vladimir, 13; Vologda, 10; Voronezh, 12; Viatka, 11; Yaroslav, 10; Don Cossacks Territory, 8. It is also planned to extend the zemstvo system to the Baltic Provinces, Poland, the Caucasus, and Siberia.

AUTHORITY AND POWER OF THE ZEMSTVOS.

The provincial zemstvos operate for the benefit of the people of the various districts, subject to the governors of those Provinces. They have charge of relief work at times of famine and for victims of the elements, crop failures, hailstorms, etc., in supplying the necessary seeds for the following season. In time of famine the peasants are furnished with provisions. The funds for this work are supplied partly by the zemstvos and partly by special contributions from the Government. The zemstvos fix rules and regulations for building operations, the prevention of fires, etc. They buy large quantities of sheet iron, which is being used to replace the thatched roofs of the peasants' cottages, which were often the cause of disastrous conflagrations. They maintain orphan asylums, homes for invalids and paupers, and workhouses; have the right to establish credit institutions for granting loans on real estate and movable property, taking deposits and discounting bills of exchange; raise loans from the Government and other sources upon authorization from the State; are required to furnish and maintain the necessary buildings for courts, prisons, penitentiaries, and reformatories. The council members elect the justices of the peace and jurymen, but all the judicial functions are controlled by the Ministry of Justice.

The zemstvos are in charge of education in their respective districts, are required to build and maintain grammar, commercial,

trade, and technical schools, and are also organizing art and commercial schools for the instruction of workmen in the trades. They also pay for the education at the universities of some of their most promising pupils. The educational work of the zemstvos is under the control of the Ministry of Education.

The medical and veterinary services in the various districts are entirely under the supervision of the zemstvos, controlled by the medical board and the governor. This department comprises hospitals; insane asylums; homes for incurables; midwifery schools; hospitals for the blind, deaf, and dumb; lying-in hospitals; and drug stores. A staff of physicians, surgeons, and midwives is attached to these institutions and supplies of drugs are kept. Special attention is given to infectious diseases, such as cholera, and to pest among horses and cattle.

In those districts where there is no Government post and telegraph service, the zemstvos establish, at their own expense, offices for forwarding mail and telegrams to the nearest Government offices. Telephone services are also being introduced by some of the zemstvos.

In recruiting soldiers for the army, the zemstvos take an active part. They are required to provide for those who have been enlisted until they join their regiments; they also care for the wives and children of soldiers enlisted in time of war, furnishing them with 61 pounds of flour, 9 pounds of gruel, and 3½ pounds of salt per person per month.

The building and repairing of country roads and bridges come under the supervision of the zemstvos. Roads which are of importance to the State (for strategical purposes, etc.) are maintained with the aid of Government allotments. All road and bridge taxes go to the zemstvos.

ZEMSTVO ELECTIONS.

Those qualified to elect the members of the zemstvo councils are landowners who are Russian subjects and own the acreage required by law in the various districts, varying from 405 to 21,160 acres; the principals of charitable and educational institutions; individuals and representatives of companies who have owned the necessary amount of property in the district for not less than one year; all those who pay taxes on property valued at $7,500; and representatives of the smaller landowners. Hebrews are not eligible. Elections take place every three years. The number of members of these councils is 15 to 62 in the provincial and 15 to 40 in the district organizations.

The sessions of each zemstvo council are presided over by a president elected from the council. All resolutions of the zemstvos are subject to the approval of the governors of the respective Provinces, who have the right of veto, but appeals can be made from their decisions to the various ministries at St. Petersburg.

IMPROVEMENT OF AGRICULTURE.

Of late years the zemstvos have employed trained specialists to study the capabilities and requirements of the various districts and to instruct the villagers in some of the higher branches of farming. Many improvements have been introduced, increasing the yield of

the cereal crop by better seed selection and the use of modern implements. Changes in crop rotation, by sowing a greater variety of grasses and roots which serve as food for live stock, have also been energetically adopted. Manure and chemical fertilizers are more generally and scientifically applied, and there is an increased cultivation of fruits and vegetables. Bulls and stallions are kept at certain centers for improving the breeds of cattle and horses.

The zemstvos maintain about 35 agricultural experiment stations, ranging in size from 54 to 613 acres. They are generally connected with agricultural schools, and the largest are in Kherson, Odessa, and Poltava Governments. The efforts of the zemstvos to better the agricultural conditions in the Empire have been aided by the Government and by the establishment of agricultural societies, mutual credit associations, and village banks, to which the State sometimes gives assistance. Under the supervision of the Department of Agriculture the zemstvos are also taking part in the development and preservation of the forests in their districts and in irrigating and draining the land.

PURCHASE OF AGRICULTURAL MACHINERY.

The purchases of agricultural machinery and implements by the zemstvos of Russia have increased in amount from about $50,000 in 1880 to more than $5,000,000 per annum. In some cases the goods are ordered by large landowners and are consigned by manufacturers and dealers to the zemstvos on a commission basis. These organizations also do considerable business on a cash basis and in renting out agricultural machines of the more expensive classes to peasants who can not afford to purchase them. By far the greater part of the business of these institutions is done on a credit basis, however. The terms granted range from six months to three years, and the amounts vary with the different zemstvos. The zemstvos of Kostroma, for instance, grant credits up to $103 to landowners and $13 to peasants. In Nizhni Novgorod the zemstvos allow 52 cents per dessiatine (2.7 acres), the total not to exceed $155. Some zemstvos require one-fourth and others one-half cash down.

There is a growing tendency among the zemstvos to deal directly with the Russian and foreign manufacturers. This formerly met with difficulties, as foreign firms had no idea of what the zemstvos were, but the custom of these organizations is now being sought.

INCOME AND EXPENDITURES.

The growth of the budgets of the Russian zemstvos in the past 40 years and the amounts spent for medical help and education is shown by the following table, which gives the returns for the 34 Governments in which zemstvos have been established:

Years.	Total budget.	Expenditures for medical help.	Expenditures for education.	Years.	Total budget.	Expenditures for medical help.	Expenditures for education.
1871....	$11,100,000	$1,200,000	$800,000	1895....	$34,400,000	$9,100,000	$4,800,000
1875....	14,800,000	2,100,000	1,900,000	1900....	45,[illegible]00,000	12,700,000	8,200,000
1880....	18,700,000	3,400,000	2,700,000	1905....	6[illegible],900,000	18,300,000	13,500,000
1885....	22,400,000	4,300,000	3,300,000	1910....	8[illegible],300,000	24,900,000	21,900,000
1890....	24,900,000	5,600,000	4,000,000	1912....	113,400,000	29,700,000	33,200,000

It will be noticed that the budgets increased slowly during the first 25 years of the existence of the zemstvos, while in the decade ending with 1910 the increase was nearly 90 per cent. There was no increase of the budgets during the Russo-Japanese War, 1905–7, but in the three succeeding years the gain was large, and since 1910 the increase has been even more rapid.

The growth in the zemstvo budget is not due to increased Government appropriations, which at present make up only about 13 per cent of the total, but to the zemstvo taxes, as will be seen from the following statements of total receipts and expenditures:

Items.	Amounts.	Items.	Amounts.
INCOME.		EXPENDITURES.	
Taxes on land and forests belonging to the Crown	$5,493,500	National education	$34,234,100
Taxes on land and forests belonging to peasants	27,116,300	Medical help	29,718,000
Taxes on private land and forests	19,981,000	Charitable institutions	1,856,000
Taxes on land yielding special profits	381,100	Veterinary organization	3,212,500
Taxes on mills and factories	12,706,100	Agricultural and economic measures	7,199,700
Taxes on real estate in cities	7,830,600	Construction of roads	7,828,500
Taxes on other real estate, and other taxes	1,269,000	Participation in expenses of Government institutions	5,396,100
		Supplementary funds	5,022,200
		Payment of debts	7,362,900
		Maintenence of the Zemstvo Board	7,965,500
		Other expenses	3,591,000
Total taxes	74,777,600		
Income on trade documents	2,277,800		
Payment received for medical help	1,798,400		
Permanent income from special funds	10,923,100		
Other income	7,873,300		
Government appropriations	15,372,200		
Various items	364,100		
Total income, including taxes	113,386,500	Total expenditures	113,386,500

The expenses for national education exceeded those for medical help in 1912 for the first time.

The population of the 34 Governments in which the zemstvos operate is estimated at 87,300,000, making the zemstvos' expenditures per capita about $1.30, of which $0.39 went for education, $0.34 for medical help, $0.02 for charity, $0.08 for agricultural and economic measures, and $0.04 for veterinary organization. Five years ago $0.78 per capita was expended.

CREDITS FOR ZEMSTVOS AND TOWNS.

In 1912 a law was enacted which provides for the granting of credits to towns and zemstvos. This law consists of (1) the statutes relating to the Government Cash Office of City and Zemstvos Credits, and (2) the statutes according to which joint-stock land banks are allowed to extend credits to cities and zemstvos without security by mortgage. The statutes of the first part empower the Government Cash Office to advance loans to cities having the right of elective administration, and to zemstvos, both provincial and county, and also gives the Cash Office the right to undertake the realization of bond loans already issued and which may be issued by said cities or zemstvos.

The funds of the Cash Office consist of: (1) A foundation capital, consisting of Government 4 per cent stock amounting to $5,000,000; (2) a floating capital, temporarily placed at the disposal of the Cash

Office by the Treasury, also of $5,000,000, in the form of Government 4 per cent stock; (3) a reserve capital formed by various deductions made from the operations of the Cash Office.

The loans can be for either long or short terms. The former are given out in the shape of bank stock, for terms of 10 to 66 years; the latter, in cash, for terms of 6 months to not exceeding 5 years. The long-term loans can not exceed $500,000.

The Cash Office is under the control of the Ministry of Finance. The administration consists of a director, two members from the Ministry of Finance, one from the Ministry of the Interior, and two from the cities and zemstvos.

The statutes relating to loans by land banks provide that loans to cities and zemstvos may be issued by any of the land banks which have received permission all over the country, regardless of the region of its operations concerning mortgages. Loans may be issued by one bank or by a combination of banks.

The new credit institution is called "cash office" and not "bank" because of the comparatively small number of its possible clients, and for the reason that the Treasury limits its responsibility to the amount of capital placed in the credit institution.

The law went into force in January, 1913. It is thought likely that it will, to a great extent, help the Russian cities to undertake all manner of improvements.

PROMOTION OF COOPERATION.

The zemstvos have recently taken great interest in the development of cooperation and that they now propose to assist the introduction and promotion of cooperation among the rural population of Russia is indicated by a number of resolutions passed during recent sessions of various zemstvos.

The chief object of the zemstvos is to enable the cooperative organizations to develop systematically and in the right direction. A number of zemstvos have made appropriations for instructors in cooperation. They have also increased the capital of special cash offices for forming and increasing the capital of credit associations (in Ekaterinburg, Olgopol, Irbit, Vladimir, Pskov, and elsewhere). Others (Ekaterinoslav, Poltava) are organizing special lectures on cooperation.

Among the practical measures adopted by some of the zemstvos are: The establishment of controlling associations of farmers to ascertain the profitableness of dairy farming, following the example of Denmark; the opening of a workshop in connection with a bootmakers' artel; the opening of a cooperative store for the sale of dairy produce, etc. Interesting from the cooperative point of view is the Velikorietzk association organized by the zemstvo of Opochetz for the preparation and sale of flax. The association proposes to construct a factory on the River Velikaya to be operated by water power, to buy up flax, to comb it by machinery, to export the combed flax, and to utilize the combings for yarn. According to the opinion of the zemstvo, such a method of utilizing flax will yield double the profit obtained heretofore. In view of the importance of this organization in regard to the development of the flax industry, the zemstvo board of the Province of Pskov (of which Opochetz is a district)

has decided to take 100 shares and to exempt the concern from paying any zemstvo taxes for a period of 10 years. The shares have a par value of 100 rubles ($51.50).

The Opochetz zemstvo has been following the example of other zemstvo institutions, chiefly of the northwestern district, which have realized the great importance of such model factories and workshops in the development of cooperative production.

According to the opinion expressed by the zemstvo of the Kazan Province, the small number of agricultural cooperative organizations must be explained by the fact that the population possesses little knowledge concerning this form of organization. With a view to the promotion of cooperative organizations and the establishment of closer relations among the same, this zemstvo has decided not to make any distinction between the different associations, but to encourage and promote the development of all kinds of cooperative associations. Special attention is to be devoted to the cooperative credit organizations as being the chief factors in the promotion of various enterprises. This view is shared by the majority of zemstvo institutions.

GROWTH OF COOPERATIVE SOCIETIES.

Russian cooperative societies of consumers numbered 6,730 in 1911. As 7,698 permits for such societies had been granted since 1865, it would appear that 968 societies had either become inactive or had never been established. The greatest development began in 1906, when 406 societies were formed, and the maximum was reached in 1907 and 1908, with totals of 1,099 and 1,290, respectively. After this period progress was slower. In 1909, 1,084 new societies were organized; in 1910, 1,007; in 1911, 678. Cooperative societies now have 1,002,100 members. By general classes, these societies show the following growth:

Classes of societies.	Number of societies.		
	1865–1895	1896–1905	1905–1911
Independent village and workmen's associations	96	808	4,807
Connected with works and railways	268	242	224
City and artisans'	197	351	514
Military and officials'	52	45	22

DISTRIBUTION BY PROVINCES.

Of the 6,730 cooperative societies existing in 1911, 4,716, or 70 per cent, were village societies, while the city societies represented 10 per cent; those located in small boroughs and suburbs, 7.5 per cent; connected with manufactories, railways, trades, and professions, 12.5 per cent. They were distributed in that year as follows: European Russia, with the exception of the Polish and Baltic Provinces, 5,029; Baltic Provinces, 228; Polish Provinces, 922; Caucasus, 217; Siberia, 291; Steppe district and Central Asia, 43.

The largest number of societies in proportion to the population is found in the Polish Provinces, where there is 1 to every 14,000 inhabitants. In European Russia the greatest number of these societies

exists in the 11 Provinces of the Little Russian, Southwestern, and New Russian districts. The largest membership is in the Provinces of Kief, Podolia, Perm, Poltava, Vologda, and St. Petersburg.

The Moscow Association of Cooperative Societies was formed in 1899 for the purpose of uniting the various societies. In 1911, 540 societies (about 10 per cent of the total number) had joined the association. Two-fifths of these societies were village cooperative organizations.

AGRICULTURAL COOPERATION.

The satisfactory growth in the number of Russian agricultural cooperative associations and companies and of cooperative butter artels in western Siberia for the past 20 years may be seen by the following table:

Year.	Agricultural companies.	Agricultural associations.	Butter artels.
1891	95	2	.....
1901	335	48	51
1906	584	82	523
1910	1,951	166	1,337
1911	3,103	333	1,600
1912	3,500	562	2,000

Of the 3,103 agricultural companies shown in the above schedule for 1911, 2,633 dealt generally with agricultural cooperation, and 470 were special companies that can be classified as: Agriculture, 172; gardening and grape culture, 107; poultry raising, 55; fishing, 48; dairy products, 45; others, 43.

SCOPE OF AGRICULTURAL COMPANIES.

Poltava Province has the largest number of agricultural companies, 225; the Provinces of Livonia, Kalish, Perm, and Novgorod have from 100 to 200 such organizations; 19 Provinces have 50 to 100; and in 59 the number does not exceed 50.

These companies have accomplished many things in the development of agriculture, but as a rule they have not succeeded so well regarding commercial operations in connection with the purchase and sale of grain; only a few have widely developed this feature. The normal agricultural companies, judging from the terms of their charter, apparently have numerous problems to solve; at one and the same time they are centers of the agricultural academies, and must cooperate in the purchase and sale of the products of agriculture. On the one hand they are formed to study and improve methods of agriculture, and on the other they are commercial cooperative bodies; yet their charter, which allows them wide latitude in the character of their operations, limits their liability to the amount of capital which is in their hands, a fact which necessarily must interfere with commercial activity.

A resolution was passed in the agricultural section of the Russian cooperative congress, held at St. Petersburg in 1912, to the effect that the companies must devote themselves mainly to promoting agriculture, and that the operations relating to the purchase and sale of products must be handled by commercial sections attached to the companies.

COMMERCIAL SECTIONS—COMPANY ENTERPRISE.

As an example of such "commercial section," the agricultural company at Minsk may be noted. Although a "section" by name, it is an entirely separate institution with 232 members, $30,000 capital, and operations totaling $200,000. Like sections exist in the companies established in the Provinces of Warsaw, Kalish, Lublin, Piotrkow, and Radom. These are, with few exceptions, the only companies covering a large territory which have separate commercial sections. The companies having a smaller territory to cover are even less successful in their commercial activity.

These agricultural companies are most successful in promoting public enterprises and assisting agronomic measures. A considerable initiative in promoting the organization of cooperative unions is observed. Frequently the companies help to organize credit or savings companies. Thus the agricultural company of Esthonia organized 31 savings institutions; in the Province of Perm the companies opened a number of cooperative stores; in the Province of Livonia cooperative societies trading in agricultural machinery and milk were formed.

From the standpoint of agriculture, the companies play an important part and form the mainstay of the growing district agronomy. They have accomplished a great deal in spreading the sale of artificial fertilizers. In the Baltic Provinces, with the assistance of the agricultural companies, the use of mineral fertilizers has been pushed considerably, even among the poorer villagers. In the Government of Pskov all the trade in mineral fertilizers is centered in the hands of those companies. There were sold from 1889 to 1908 in that province 500,000 poods (about 8,065 long tons) of phosphate fertilizers and 283,000 poods (4,565 tons) of potash fertilizers. Many companies also sell fertilizing seeds.

TRADE OF AGRICULTURAL ASSOCIATIONS—BUTTER ARTELS.

As to agricultural associations, the greater number of these (241) are occupied with the general needs of the rural inhabitants. The next in number (205) are those dealing in milk products. Of the remaining number of associations 35 deal in agricultural machinery, 9 deal in wine, 6 in apiculture, 4 in cattle raising, etc. In 1910 the first special association for the sale of bread was established and in 1911 for the sale of eggs.

The total trade of these associations in 1911 reached $13,000,000 but the greater part ($7,000,000) fell to the share of those associations whose area of operations is wide and which have less of the cooperative element in their organization. Most of them, organized according to the charter law 1897, may be characterized as purely trading organizations, associations of shareholders affording loans and buying merchandise that is later sold at a good profit. The value of each share is $25 to $50, so that the poorer class can not participate. The fact that one individual can buy up any number of shares often results in the association being formed by a small number of more or less wealthy persons.

There is another type of association which exists in Russia, formed not by charter, but by a contract drawn up by a notary public. Of

such cooperative bodies the most important by far are the butter associations, especially those of western Siberia. Since 1903 the Ministry of Agriculture has granted $3,585 a year to assist these butter "artels." At the same time throughout Siberia by enactment certain credits were placed at the disposal of the artels for the development and upkeep of their factories.

CENTRAL COOPERATIVE UNIONS.

Until 1908 Siberian butter was sent abroad only through foreign exporters. In that year the Union of Siberian Butter Artels was formed. The central establishment of the union is at Kurgan (Siberia) and it has special representatives in Berlin and London. In thus selling direct the union obtains better prices than those in the Siberian markets. In June, 1912, the union membership included 318 artels.

Notwithstanding the comparatively small development of cooperation in Russia, the advantage of having central cooperative unions has become evident. Throughout the Empire (not counting the Siberian butter artel union) there are seven agricultural unions: (1) The Central Agricultural Co., Warsaw, Poland, containing 39 district agricultural companies, connected in their turn with 370 agricultural bodies of smaller size, having 10,000 members; (2) and (3) the Riga Central Agricultural Co. and the Economic Co. of Lithuanian Agriculturists, also in Riga, each composed of 45 agricultural companies; (4) the Estskoye Economic Association, in the city of Yuriev (Dorpat), forming the connecting center of 30 agricultural companies; (5) the Vologodskoye Agricultural Co., city and Province of Vologda; (6) the Kubanskoye Agricultural Association, city of Ekaterinodar, Kuban Territory, Caucasus; (7) the St. Petersburg Central Agricultural Co., connected with 35 smaller companies.

The Vologodskoye Co. has among its members 79 cooperative store companies, 34 butter artels, and 1 agricultural company, and thus possesses more the character of a general store and butter cooperative society.

COOPERATIVE RENTING OF LAND.

Russia does not possess any established type of cooperation for renting land. There have been frequent attempts made to hire land collectively, initiated in some cases by cooperative credit associations which rented comparatively large areas of land for distribution among their members by tracts. This form of operation comes under the head of "Regulations concerning intermediary agencies in regard to the hiring of land," confirmed on July 24, 1907. The lease is contracted in the name of the association and not in the name of the separate individuals.

An association of good standing and reputation which is in a position to pay the rent in advance easily obtains favorable terms and sublets the land to its members with a slight increase of the price in order to cover the expenses of the transactions and to provide against possible nonpayments of the members. If the association takes any preliminary obligations upon itself, such as the payment of security at the drawing up of the contract, etc., it must have in its possession signatures and bonds of the members who propose to hire

the land contracted for. The association is held responsible for the fulfilling of the contract, but, according to the regulations, this responsibility must be adjusted among a given number of the members. All payments are made and expenses borne by the association, but are afterwards subdivided as loans among the members who share the land.

Operations of this kind are frequently met with in the south of Russia, principally in the Province of Kherson. For instance, the Konstantinovsky Association in the Province of Kherson rented land for the sum of $7,725 in 1908 and $10,712 in 1909. The terms of the contract proved to be favorable for the participators, as they paid $2.30 per acre, while the price before the association took the matter in hand was $3.45 per acre. The money advanced to members for leasing lands represents a considerable part of the loans issued by the credit cooperative bodies.

REVIEW BY CONSULAR DISTRICTS.

BATUM.

[Consul Leslie A. Davis.]

The population and industries of the principal cities in the Batum consular district, which comprises Transcaucasia and Ciscaucasia, are as follows:

Towns.	Population.	Industries.
Akhaltsikh	23,095	Agriculture, fruit.
Alexandropol	50,832	Agriculture, forest.
Baku (including oil well territory.)	343,513	Mineral oil; distributing center for Central Persia.
Batum	34,117	Oil and manganese exports.
Derbent	33,167	Fish.
Ekaterinodar	98,422	Agriculture and cattle.
Elizavetpol	59,000	Wine, silk, cotton, and cereals.
Erivan	32,369	Wine, silk, cattle, and fruit.
Grozny	29,848	Agriculture and mineral oil.
Kars	35,732	Agriculture and cattle.
Kutais	55,238	Agriculture, wine, silk, and cereals.
Maikop	51,175	Agriculture, mineral oil, cattle, and fruit.
Novorossisk	71,036	Exports oil, cereals, and agricultural products.
Nuha	37,003	Agriculture, silk, etc.
Petrovsk	18,248	Oil from Baku, transit shipments.
Poti	17,080	Exports manganese ore.
Shusha	42,016	Carpets.
Stavropol	55,300	Agriculture and cattle.
Tiflis	306,814	Agriculture, Capital of Caucasus; seat of viceroy; principal distributing center for manufactured goods for Caucasus and Northern Persia.
Vladikavkaz	76,225	Agriculture; principal town of Northern Caucasus.
Yeisk	47,579	Exports cereals.

The following table shows the area and population of the different divisions of this consular district:

Sections.	Square miles.	Population (1909).
Governments of:		
Tiflis	23,146.73	894,500
Kutais	12,233.17	915,800
Baku	22,622.45	731,800
Erivan	16,109.42	849,800
Elizavetpol	26,060.78	898,900
Tchernomoria (Black Sea Government)	4,836.02	64,600
Provinces of:		
Kars	10,873.60	323,300
Daghestan	17,873.76	589,700
Batum	4,045.43	121,600
District of:		
Sukhum	3,822.58	114,000
Zakatal	2,311.48	87,000
Area of Transcaucasia	143,935.42	.....
Government of Stavropol	31,497.19	100,600
Provinces of:		
Kuban	55,040.31	2,295,600
Ter	41,918.40	955,500
Area of North Caucasus	128,455.90	.....
Total for the Caucasus	272,391.32	8,942,700

CAUCASUS TRADE INCREASED IN 1912.

Notwithstanding the continuance of the Turko-Italian War into 1912, with the temporary closing of the Dardanelles, and the outbreak of the Balkan War toward the end of the year, trade in the Caucasus in 1912 was somewhat greater than during the past few years, on account of the rise in prices of most classes of the products of this district. There were few new enterprises, however, and the condition of the bulk of the population was not materially affected by the increase in trade. This is due largely to the fact that the Caucasus is essentially an agricultural region with a very large rural population. Most of the industrial progress was in the cities, while in the rural districts in this region progress is unusually slow.

The cities, however, are growing rapidly and are introducing many municipal improvements. Tiflis, the seat of the Viceroy of the Caucasus, is now a city of over 300,000 people, and Baku, the chief distributing center and most flourishing commercial city in this section, has a population of over 200,000. Both of these cities have good modern hotels, theaters, and stores. Other cities are rapidly attaining important places in the commercial and industrial development of this consular district. Among these are Novorossisk and Ekaterinodar in the northern Caucasus, where trade was generally good during the past year. In all of these cities, and especially in Baku and Tiflis, many large new houses and stores are being erected, but they are not sufficient to meet the demand. As a natural consequence of this rapid growth, there is also a general increase in the cost of living.

There were no labor troubles of importance in the Caucasus during 1912 and good order was preserved in the cities and towns. The unrest and serious disturbances of a few years ago appear to have entirely subsided, and there are no indications of trouble of this character in the future.

MARKET FOR AMERICAN GOODS—IMPORTS.

It would seem that the improved social conditions and the growing prosperity of the cities, together with the efforts to extend agricultural and technical education among the people, would eventually create a demand in the Caucasus for many American manufactured products, in addition to the machinery and agricultural implements now being imported. The establishment of regular direct steamship communication between America and the Black Sea ports of the Caucasus, which began in April, 1913, will materially assist American exporters by lowering freight rates and furnishing a quicker service for the transportation of their goods.

The principal articles of import and export through the port of Batum in 1910, 1911, and 1912 are shown in the following table:

Articles.	1910	1911	1912	Articles.	1910	1911	1912
IMPORTS.	*Tons.*	*Tons.*	*Tons.*	EXPORTS.	*Tons.*	*Tons.*	*Tons.*
Cement	.....	.....	2,200	Albumen and entrails	152	114	49
Chemicals	439	451	1,068	Almonds, nuts, and raisins	804	2,498	731
Colonial wares (tropical products)	184	147	114	Carpets and rugs	783	943	788
Copper, iron, cast iron, zinc, and steel	643	541	1,499	Cotton seed	52	2,378	19,293
Copper, iron, tin, and steel wares	794	1,046	1,883	Grain and flour	24,791	42,992	25,391
Fire bricks, clay, and tiles	4,606	6,377	5,009	Licorice root	10,886	15,186	15,647
Fruit, dried fruit, wines, and spirits	2,284	2,155	1,596	Manganese ore	43,119	129,233	277,499
Indigo	81	133	20	Oil cake	19,359	12,758	11,193
Machinery	1,443	1,884	1,956	Petroleum products	645,080	595,271	545,725
Spelter and lead	490	363	319	Salt	192	743	1,114
Sulphate of copper	546	1,045	1,201	Seeds, grass and lucern	2,679	2,141	1,357
Sulphur	895	2,685	1,649	Silk, raw silk, and cocoons	1,801	1,524	1,076
Stone and marble	364	282	275	Skins and hides	204	118	699
Tin plates	11,922	7,410	7,938	Tobacco	261	379	513
All other articles	3,073	3,023	2,244	Wood, boxwood, walnut, chestnut, and veneer	3,916	3,961	5,062
				Wool	2,080	3,793	4,264
				All other articles	7,282	2,860	2,258
Total	27,764	27,542	28,971	Total	763,441	816,892	912,659

The imports into the Caucasus during 1912 were very slightly in excess of those during 1911, but there was a considerable advance in the exports, due principally to the increased trade in manganese ore. The value of all imports through the port of Batum during the year is estimated to have been about $2,000,000, while the value of the exports through this port for the year is estimated at about $17,000,000.

It will be noticed that there is now a constant growth from year to year in the amount of goods handled in the port of Batum. The rapid increase in the imports and exports which took place until the disastrous years of 1905 and 1906 has now yielded to a normal and steady growth. This has been caused by the increase of exports and is the more remarkable by reason of the unfavorable conditions of communication with western Europe during the past year, caused by the war in Turkey and the closing of the Dardanelles. By far the greatest increase was in the amount of manganese ore exported. The figures for 1912 exceeded those for 1911 by 148,266 tons and those for 1910 by 234,380 tons. There was also an increase in the amount of licorice root exported, due to the closing of the only factory in the Caucasus for the manufacturing of licorice from the root. The exportation of kerosene, crude oil, and maize decreased.

IMPORTS INTO NOVOROSSISK.

The total imports into Novorossisk during 1912 amounted to 64,580 tons, as compared with 55,988 tons in 1911 and 42,510 tons in 1910. This increase was mostly in agricultural implements from the United States and other kinds of machinery from England. Some machinery was also imported from Denmark and Germany. Other articles of import were fire bricks and carbolic acid from England, large quantities of roofing tiles from France, and oranges and lemons from Italy. The principal articles which find a ready sale in the

northern Caucasus are machinery, hardware, iron goods, motors, motor cars, fire bricks, and agricultural machinery and implements of all kinds.

The exports from Novorossisk during 1912 totaled 1,250,658 tons, as compared with 1,746,771 tons in 1911. The principal articles of export during these years were cereals, oil cake, and oil products. In 1912 there were exported 703,742 tons of cereals, 149,828 tons of oil cake, and 213,168 tons of oil products, as compared with 1,339,592 tons of cereals, 131,615 tons of oil cake, and 153,879 tons of oil products in 1911. The noticeable decrease in the amount of cereals exported was due to the poor condition of the roads, caused by the bad weather of the year, which prevented farmers from bringing their grain to the railways.

TRADE OF POTI—EXPORTS TO THE UNITED STATES.

The total imports into Poti during 1912 amounted to 4,952 tons, as compared with 4,058 tons in 1911, and in both years consisted almost entirely of cement. The amount of this article imported in 1912 was 4,923 tons and in 1911 it was 4,000 tons. The total exports from Poti in 1912 amounted to 666,369 tons, as compared with 519,360 tons in 1911. The increase in this port also was due almost entirely to the larger amount of manganese ore exported, which more than offset the decrease in some other articles. The amount of manganese ore exported in 1912 was 634,200 tons, as compared with 442,460 tons in 1911, an increase of 191,740 tons, while there were only 21,419 tons of maize exported in 1912, as against 73,820 tons in 1911. There were also 1,840 tons of walnut wood and 8,000 tons of pine wood exported in 1912, as compared with 1,650 tons of walnut wood and 1,200 tons of pine wood in 1911.

There was a decided increase in the amount of exports from this consular district to the United States during 1912, as shown by the following table of declared exports invoiced at the Batum consulate during the past three years:

Articles.	1910	1911	1912
Apricots		$1,222	
Casings, sheep	$3,171	1,854	$447
Clover seed	20,882	18,834	
Licorice root	486,302	557,238	569,786
Manganese ore	259,898	197,737	521,791
Nuts			5,173
Potash, carbonate of		43,744	30,992
Raisins	3,068	30,768	21,377
Rugs	119,865	102,969	165,881
Skins:			
Goat			14,379
Sheep	17,228	10,614	149,526
Tea, Russian		827	
Tobacco	1,019	2,898	3,734
Water, mineral			903
Wood, walnut	32,862	85,860	182,231
Wool	562,984	871,197	1,178,424
All other articles	373		
Total	1,507,652	1,925,762	2,844,644

No invoices were declared for shipment to the island possessions of the United States.

SHIPPING OF BATUM, NOVOROSSISK, AND POTI.

The number of steam vessels of all nationalities that entered into the foreign trade of the port of Batum during 1912 was 525 of 902,669 total tonnage, as compared with 558 vessels of 899,741 tons in 1911 and 472 vessels of 960,688 tons in 1910. At Novorossisk 320 steam vessels of 678,481 tons entered into the foreign trade of the port, as compared with 440 steam vessels of 832,830 tons in 1911. At Poti 157 steam vessels of 312,386 tons entered into the foreign trade of the port, as compared with 131 vessels of 248,286 tons in 1911.

TRADE WITH PERSIA.

Russian trade with Persia continues to increase rapidly. This is due chiefly to Russia's great advantage in having control of the principal routes leading to the several Provinces of northern Persia, and to the high duty charged on the transit of goods from Europe to Persia. Another factor that has recently contributed materially to the increase of Russian trade with Persia is the presence of Russian troops in that country. Their requirements have created a considerable demand for products of Russian growth and goods of Russian make. Russian trade with Persia has still further increased by reason of shortage in the yield of wheat, rice, and other crops in Persia, which necessitated the obtaining of supplies from Russia. The articles exported from and through the Caucasus to Persia include such commodities as sugar, flour, kerosene, and manufactured goods.

The cities of Astrakhan, Baku, Batum, and Tiflis are situated on the trade routes from Russia to Persia. The most important part in this trade is taken by the city of Baku on account of its harbor facilities and advantageous situation on the Caspian Sea. This city has frequent steamship communication with the ports of northern Persia. The second place in this trade is held by the city of Astrakhan, as that is the principal outlet for goods shipped from the cities along the Volga. Other goods from Russia are shipped via Poti or Batum to Tiflis and thence to Djulfa. This trade will be materially assisted by the construction of the new railway from Djulfa to Tabriz, for which a concession has recently been given to a Russian engineer and on which it is expected that the work of construction will begin soon. If the contemplated railway from Batum to Kars is built, it will be still easier to send merchandise from Russia to northwest Persia.

PERSIAN AND CENTRAL ASIATIC TRADE AT BAKU.

The goods landed at Baku in 1912 from Persia and by coasting vessels from Russian Central Asia exceeded those of 1911 by about 6 per cent and amounted to 778,023 tons, as shown by the following table:

Articles.	Tons.
FROM PERSIA.	
Cereals	66,262
Cotton seed	20,645
Firewood	12,045
Fish	6,682
Fruit	5,914
Linseed	573
Oil seeds	2,010
Rice	68,135
Timber	2,033
Tobacco and cigarettes	787
Vegetables	601
Walnut logs	2,046
Wool and carpets	6,516
Total	194,249
FROM RUSSIAN CENTRAL ASIA.	
Building material	10,786
Cooperage products	3,864
Cotton seed	3,200
Crude oil	182,490
Drinking water	98,310
FROM RUSSIAN CENTRAL ASIA—contd.	
Firewood	4,793
Fish	11,223
Flour	17,004
Fruit	5,859
Glass and crockery wares	4,198
Iron and metallic goods	28,533
Linseed	2,243
Manufactured goods	10,147
Provisions	2,906
Oil seeds	9,277
Rice	10,234
Salt	16,757
Spirits	967
Sugar	6,252
Tea	177
Timber	122,963
Tobacco and cigarettes	451
Vegetables	10,086
Walnut logs	507
All other articles	20,487
Total	583,774

The goods shipped from Baku to Persia and by coasting vessels to Russian Central Asia during 1912 show a decrease, however, of about 14 per cent in comparison with the exports in 1911, and amounted to 4,560,814 tons, as shown by the following table:

Articles.	Tons.
TO PERSIA.	
Building material	1,348
Cereals	1,000
Cooper's goods	338
Flour	9,692
Glassware	660
Kerosene	24,302
Manufactured goods	1,701
Metals	2,095
Sugar	49,796
Tea	14
Total	90,946
TO RUSSIAN CENTRAL ASIA.	
Beer	3,293
Building materials	3,060
Cereals	3,019
Charcoal	4,380
Cooper's goods	2,516
TO RUSSIAN CENTRAL ASIA—contd.	
Cotton	4,074
Fish products	4,114
Flour	28,200
Fruit	7,966
Glassware	1,655
Kerosene	741,739
Manufactured goods	1,838
Metals	15,000
Petroleum products	2,970,067
Provisions	6,872
Residues, petroleum	602,165
Rice	35,779
Salt	2,940
Spirits	3,333
Sugar	8,232
Tea	6,624
Timber	6,814
All other articles	6,188
Total	4,469,868

The total amount of goods handled in the port of Baku during the past year amounted, therefore, to 5,338,837 tons, which is slightly less than in 1911.

THE OIL INDUSTRY IN 1912.

Although the oil industry in the Caucasus is slowly declining by reason of the gradual exhaustion of the oil fields, 1912 was a year of general prosperity marked by high prices and a slightly greater production than in 1911. The increase in production was due principally to the greater activity of the producers, on account of the high prices, in boring new wells and exploiting new territory, and also to a large output from fountains toward the end of the year.

Old companies were reorganized and new companies formed and speculation in oil became general.

The production from the old fields of Balakhani and Sabounchi-Romani dropped from 5,201,613 tons in 1911 to 5,009,355 tons in 1912, which was not fully balanced by the increase in the production of the Bibi-Eybat fields from 1,653,226 tons to 1,688,709 tons. The development of the Surakhani field continued, the output, including gas equivalent to 38,435 tons, amounting to 548,387 tons, as against 338,709 tons in 1911, of which gas was equivalent to 61,806 tons. The production of the outlying fields of Binagadi, Holy Island, and Tcheleken also showed an increase, the 1912 production being estimated at 419,355 tons, as against 322,581 tons for 1911, the greater part being contributed by Tcheleken. The total production available at Baku during 1912 was therefore about 7,726,000 tons, as against 7,516,000 tons in 1911, or an increase of about 2.8 per cent. The total yield of the new wells is said to have been about 890,322 tons, or more than 12 per cent of the total output of the fields forming the Baku oil territory.

Notwithstanding the increase in production, shipments of petroleum products from the Baku oil territory to the markets in Russia were on the decline throughout the year and consumers of liquid fuel experienced a great scarcity of oil. Many of them were compelled to fall back on coal for fuel purposes. Petroleum producers attribute this decrease in shipments to their anxiety to replenish their stocks of oil at Baku, which had become greatly depleted by the end of 1911.

INCREASE IN DRILLING ACTIVITY.

Owing to the high prices, there was a marked increase in drilling activity. Both the number of new wells started and new wells completed, and also the average of wells in exploitation, show an increase as compared with the figures for 1911. The average daily production per well, however, shows a decrease of more than 10 per cent. The increase in boring operations took place mainly on the northern fields at comparatively small depths. The average depth of the new wells completed was only 1,232 feet, whereas wells now in process of drilling in Bibi-Eybat have already gone down over 2,800 feet. Several contracts have been concluded with the representatives of an American rotary drill system, who claim to be able to do the drilling in much less time than under the present method.

There has been great activity in the staking out and selling of oil claims. Much speculation is going on to the east in land between Surakhani and the sea in the districts of Benna and Kala, but this land appears to be the least promising. Test borings are also being made at various points on the island of Tcheleken.

The Government decided during 1912 to lease out to oil-producing firms a considerable quantity of oil lands in and around Baku, and announcements were made of auctions to be held in the spring of 1913 for several Crown oil plots.

OIL INDUSTRY IN OTHER FIELDS—PRICES RISING.

The Grosny oil fields produced about 1,048,387 tons, or about 161,290 tons less than in 1911. This decrease in production is accounted

for by the unexpected appearance of large quantities of subsoil water which flooded many of the oil-bearing strata. The Maikop oil territory showed no signs of increased productiveness, and only about 145,161 tons were produced from the few oil-yielding wells in the district. Some deeper drilling operations are now in course of progress. Prospecting work for mineral oil has been done by British companies during the past year on some new fields situated near Anapa and Taman in Kuban Province, but the results are not yet known.

Prices of oil reached high figures during 1912. Since the end of 1910, prices of crude oil have risen from 14.4 to 38.39 kopecks per pood (20½ to 54¾ cents per 100 pounds), or nearly 170 per cent. In 1912 Mazut rose from 21.2 to 34.3 kopecks per pood (30.2 to 48.9 cents per 100 pounds). Kerosene, in tank cars, averaged 60.4 cents per 100 pounds, and in steamers 60.36 cents.

EXPORTS OF PETROLEUM PRODUCTS.

The exports from Batum of petroleum products manufactured at Baku was less than in 1911 by about 49,546 tons. This is to be attributed to the decline in the demand for Russian kerosene in cases and cans in Europe owing to other sources of supply, the prevalent high prices, the Balkan war, the consequent unsettled conditions of the Near East markets, and the caution exercised by exporters in the matter of avoiding accumulations of stocks of oil in Turkey. The number of cases of petroleum shipped from Batum in 1912 was 1,400,000 and the number of cans was 3,200,000. The shipments of petroleum products through the port of Batum during the past two years were as follows:

Products.	To foreign countries.		To Russia.	
	1911	1912	1911	1912
	Gallons.	*Gallons.*	*Gallons.*	*Gallons.*
Illuminating oils	99,278,501	86,574,413	14,477,460	7,883,505
Lubricating oils	48,225,650	47,722,188	958,456	664,323
Naphtha residuum	16,021,767	12,765,757	371,233	325,049
Crude oil	7,847	.....	7,930	9,531
Other petroleum products	64,634	44,222	7,097	.....
Total	163,598,399	147,106,580	15,822,176	8,882,408

POSSIBLE REVIVAL OF THE CASE AND CAN INDUSTRY.

A new company, which acquired in 1912 the business of the Caspian and Black Sea Naphtha Industrial and Commercial Society, again set up a small case and can factory in Batum, and toward the end of the year commenced shipping illuminating oil. This enterprise has been undertaken on a small scale, but it is capable of development should business prove prosperous.

MANGANESE MINES IN THE CAUCASUS.

The manganese deposits of the Caucasus are among the richest in the world. The principal mines are situated at Tchiatouri, in the Kotais Government, about 125 miles from the Black Sea ports of

Batum and Poti. The exploitation of these mines began in 1878, but remained on a very limited scale until 1885, when the Transcaucasian Railway was constructed. The mines at Tchiatouri lie in a region of horizontal sedimentary formations, divided by the Kvirili River. These are again crossed by numerous branches of the river, so that the entire region is divided into seven plateaus: On the right side of the Kvirili—Rgani, Sedergani, Mguemevi, Darkveti; on the left side—Perevissi, Choucrouti, Itkhrvisi. The total area covered by these mines is about 55 square miles, of which 44 square miles contain good ore.

The ore outcrops are about 1,000 feet above the level of the river and the ore lies in a horizontal bed, with limestone below and sandstone above. Besides solid benches, the ore also occurs in granules (oolitic form) mixed with sandstone. The richest ore has been found in the plateaus of Mguemevi, Sedergani, and Choucrouti; Rgani plateau yields rich wash ore. According to the calculations of Russian geologists the Tchiatouri mines contain about 1,070,000,000 tons of ore, estimated to be sufficient to supply Europe and the United States for at least half a century, especially as the Tchiatouri ore is of high quality. The mines can be worked easily over great areas, by galleries, with the use of picks and shovels.

The mines are owned by a large number of Georgian peasants, who are without capital or knowledge of mining. Until recently, with few exceptions, the mines have been worked in a most primitive way, resulting in the recovery of only about two-thirds of the ore. Within the last seven years various foreign firms have bought up some of the larger plots and have started mining by more modern methods. The lump ore is separated by hand from the sandstone; only the ore occurring in granules is separated by water concentration in washing plants. In washing, the granular ore can be concentrated up to 60 per cent of metal or 90 per cent of manganese peroxid (MnO_2), but these percentages are above the averages for the district.

The ore is transported to the railroad at Tchiatouri in two-wheeled oxcarts or by pack horses, and over bad roads, for distances varying from $1\frac{1}{2}$ to $3\frac{1}{3}$ miles, at a cost of 1 to 1.5 cents per 36 pounds. The position of the mines is favorable for mechanical transportation of ore, especially by wire ropeways, but on account of lack of capital such methods have begun to be employed only recently and by a few firms. From Tchiatouri the ore is carried on the Tchiatouri Railway, a 25-mile narrow-gauge branch of the main line, to Sharopan, where it is transferred into the cars of the Transcaucasian Railway and shipped to either Batum or Poti.

GROWTH OF THE MANGANESE-ORE INDUSTRY.

The industry recovered from the check experienced in 1911 and improved steadily throughout 1912. The total production of manganese ore in the Caucasus during the latter year is estimated to have been about 725,806 tons, while the production in 1911 was only 451,600 tons. The export to foreign countries amounted to 852,734 tons and the shipments to Russia to 89,838 tons. It is estimated that in all about 1,000,000 tons were sent away in 1912 through the ports of Batum and Poti, a part of which remained in

South Russia and is not included in the foregoing export figures. It will be noticed that the greater production during the year did not meet the increased demand. Consequently, the stocks of ore lying on railway platforms at Tchiatouri have been considerably reduced and probably do not exceed 650,000 tons at present. The increase in the manganese-ore industry and exports is due principally to the great activity of ferromanganese works generally, and it is probable that the export of manganese ore for 1913 will even surpass that of 1912.

FOREIGN TRADE IN MANGANESE.

The difference in freight rates on manganese ore between the fields of British India and those of the Caucasus was about $2.50 per ton in favor of this district, instead of only $1.25 to $1.50 as in previous years. The exceptionally high freight rates which prevailed played an important part in the export trade in manganese ore. Many cargoes sold on long-time contracts for delivery in 1912 were not delivered and buyers of manganese had to make new contracts for the supplies of ore required by them. Those exporters who were able to meet the demand for prompt cargoes did a large business.

The amount of manganese ore shipped to foreign countries from Batum during 1912 was more than double that shipped in 1911, as shown by the following table:

Exported to—	1911	1912
	Tons.	*Tons.*
United States (direct)	10,694	87,753
Austria	4,256	10,246
Belgium	12,994	37,965
France	15,885	20,137
Germany	25,536	44,325
Great Britain	31,869	28,443
Netherlands	27,999	79,503
Total	129,233	308,372

The exports from the two Caucasian ports of Poti and Batum during the last five years have been as follows:

Ports.	1908	1909	1910	1911	1912
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Poti	366,600	544,000	364,500	442,460	634,200
Batum	8,160	25,500	36,215	129,233	308,372
Total	374,760	569,500	400,715	571,693	942,572

SHIPPING FACILITIES INADEQUATE.

The increase of the shipments from Batum is largely due to the imposition of a tax at Poti to pay for an elevator built there some seven years ago, although never used. This tax practically offsets the additional freight rates for the greater distance of 25 miles from the Tchiaturi mines to Batum than to Poti. Many of the exporters have their offices at Batum and, considering that the expenses are about the same, find it an advantage to have the loading done there where it can be personally superintended without the necessity of

maintaining a separate office at Poti. All of the shipments to the United States were from Batum, 10 full shiploads being sent in 1912 in chartered vessels.

The manganese-ore traffic has now become a prominent feature of the trade of the port of Batum but is seriously handicapped by the lack of proper facilities. A portion of the quay in the inner harbor has been set apart to meet its requirements, but there are not enough berths for the increasing number of large vessels that the trade brings. The situation is made still worse by the condition of the port, which causes great delays and inconveniences and is dangerous to shipping in bad weather.

CAR SHORTAGE—HARBOR IMPROVEMENTS NEEDED.

Furthermore, vessels were obliged to remain in port, occupying loading berths for long periods during the year 1912, and especially during the last two months of the year, on account of the inability of the State railway, owing to the scarcity of railway trucks, to bring down the ore fast enough from the mines to the sea. During a temporary lull in the exports in September and October, caused by the high freights, the railway authorities, finding they had a large number of trucks standing idle, sent them away to other districts. In November, however, when freights were lower and a large number of steamers came to the ports of Poti and Batum, the railway was unable to meet the increased demand for trucks. Consequently they apportioned them to exporters according to the stock of ore each had lying on the railway platforms at Tchiatouri. As a result, the exporters with small stocks who had effected sales of manganese were obliged to buy ore from the larger dealers in order to supply their steamers in time to save the payment of demurrage. Steamers generally were unable to load quickly and leave port. Consequently there was a great congestion of shipping in the harbor.

If the present manganese trade from Batum is to be retained, the harbor accommodations will have to be enlarged, facilities for quick loading provided, and more berths placed at the disposal of the vessels carrying manganese. The construction of elevators for loading manganese ore at Batum is being contemplated and an engineer has already put forward proposals which are under consideration. The situation has already been relieved somewhat by the construction of a line of rails along the quay.

PROPOSED MEASURES FOR THE MANGANESE INDUSTRY IN GENERAL.

Efforts have been made to have the rail freight rate on manganese ore to Poti decreased from 5 to 3½ kopecks per pood (7 to 5 cents per 100 pounds). It was argued that although the price of manganese ore had advanced, the increase that had taken place was barely sufficient to cover the increase in ocean freights and that the average price of ore left no profit to the exporters. The committee on freight, however, and the representatives of the railway, refused to decrease the rate on the Tchiatouri branch on the ground that the increase of exports distinctly pointed to existing prosperous conditions and that the trade required no fostering measure of the kind proposed.

A measure under consideration would give the association of manganese producers the power to increase the tax in favor of the association from ¾ to 1½ kopecks per pood (1.07 to 2.14 cents per 100 pounds), but vigorous opposition was made by exporters and large producers and nothing definite has yet been done.

Another measure under consideration by this association is the construction of branch railway lines in the side valleys of the manganese district. The large producers, while approving of this extension of the railway system, consider that the State should take over the building and the control of the branch lines.

About two-thirds of the total production of the Tchiatouri mines is now washed. Several new washing plants were completed and started operations at the mines in 1912, including one very large plant installed by a German company. No satisfactory scheme has been devised, however, to remedy the grievances arising from the pollution of the waters of the Kvirili River, although efforts were made by the association to find some means of purification.

COAL, CEMENT, CARBONATE OF POTASH, AND OTHER MINERALS.

An inferior quality of coal is found at Tkvibuli, near Kutais, and owing to the increased demand for fuel in Russia the production of 1912 rose to 69,917 tons, as compared with 13,571 tons in 1911. The greater part of this was used on railways.

Cement was in great demand during the past year, and the cement works at Novorossisk, Gelendjik, and Gudaut were exceptionally busy. Two new works began operations near Novorossisk during the year. The price was about $2.75 to $3 a barrel, and the demand was so great that it was necessary to import 10,000 to 15,000 tons of cement from abroad, in addition to the production of about 300,000 tons here.

Other mineral productions in the Caucasus during the year 1912 were as follows:

Minerals.	Quantity.	Minerals.	Quantity.
Silver, lead, and zinc ores.....tons..	26,060	Fire clay.....tons..	2,667
Iron ore.....do....	300	Quartzite.....do....	1,800
Sulphur.....do....	6,457	Quartz.....do....	5,181
Pumice stone.....do....	350	Cement stone.....cubic fathoms..	32,814
Infusorial earth.....do....	591	Cobalt.....hundredweight..	1

The export of carbonate of potash from the northern Caucasus during 1912 amounted to 6,736 tons, as compared with 6,282 tons for 1911. The price was somewhat lower, owing to the large supply of Russian potash in the markets abroad. The value of the export to the United States was $30,992, as compared with $43,744 in 1911.

PUMICE STONE IN THE CAUCASUS.

Among the mineral resources of the Caucasus are some large deposits of pumice stone in the Province of Kars and some smaller ones in the neighboring Province of Erivan. The only one that has been worked is located 7 versts (about 5 miles) from the town of

Kars, where the stone occurs in large pieces. Recently two large deposits of small pieces, each about a square kilometer in area, have been discovered about 40 versts (27 miles) from Kars. These have not yet been worked, but borings have been made to a depth of about 40 feet without reaching the bottom, and it is estimated that each contains about 180,000 short tons. It is expected that work will begin there next year.

A concession to work the first-mentioned deposit was granted by the Russian Government in 1909 to an engineer in Tiflis. The concession was for 16 dessiatines (about 43 acres). Only about one-quarter of this area contained any pumice stone, and the deposit is now nearly exhausted. In the immediate vicinity, however, another deposit of good, large pieces of pumice stone has been found, and work is soon to be commenced there under a new concession. During the four years that the first deposit has been worked about 361 short tons were obtained each year, or a total of about 1,444 tons. Approximately half of this amount, consisting of the large pieces, has been sold, and the rest remains on the ground.

Some 300 workmen were employed the first year prospecting and starting operations, and since then in the neighborhood of 50 men have been carrying on the work. Most of them are Armenians, Greeks, and Molokans. They receive about 30 cents per day in winter and 46 to 51 cents in summer. The work is carried on with picks and shovels, and the men average about 144 pounds per day for the large pieces, while for the small pieces and powder the amount varies considerably, ranging from 36 to 542 pounds per day. All of the pumice stone, whether large or small pieces or powder, contains about 25 per cent of water and about 25 per cent of sand or gravel, so that after being cleaned there is left for use only about one-half of the gross product.

The stone is carted to the railway station at Kars by horse and wagon at an expense of about 4 cents per 100 pounds. The freight from Kars to Batum, 400 miles, is 21 cents per 100 pounds.

NEW CONCESSION TERMS.

Under the former concession the Russian Government received 36 cents per 100 pounds, regardless of the quality of the stone, whether consisting of large or small pieces, whereas it is said the Italian Government takes only one-half that amount for the large pieces and small amounts for the small pieces, varying according to their size. A new concession is about to be obtained from the Russian Government which will be more favorable to the promoters, and the amounts paid for small pieces and powder will be small.

The engineer in charge of the work says it will be possible to furnish about 500 tons each year of the large pieces and about 18,000 tons of the small pieces and powder. He also says that the large pieces of pumice stone can be sold at Batum for 1.80 rubles per pood ($2.57 per 100 pounds), including wrapping, and the small pieces for 25 kopecks per pood (36 cents per 100 pounds). The engineer who has the concession from the Russian Government for working these deposits of pumice stone is Mr. G. E. Pridonoff, Sergievskaya 11, Tiflis.

Copies of comparative analyses of samples of Caucasian and Italian pumice stone, submitted by Mr. Pridonoff, are on file in the Bureau of Foreign and Domestic Commerce and will be loaned on application.

TOBACCO—SUNFLOWER SEEDS—AGRICULTURAL MACHINERY.

The tobacco crop in the Kuban Province and Black Sea coast in 1912 was smaller than usual but of better quality. The yield in the Kuban Province was only about 6,500 tons, whereas it is usually about 16,000 tons. The exports were much less than during the preceding year, but the demand for tobacco from the Caucasus is increasing, owing to the decrease of exports from Turkey during the war.

The crop of sunflower seeds in 1912 was much larger than that of 1911, but the amount exported was only about one-quarter that of the preceding year.

There is a considerable field for the introduction of agricultural machinery in the Caucasus. Agriculture is the leading industry of this entire region, but even in the more settled parts of Transcaucasia the peasants may be seen to-day plowing with crooked sticks. All of their implements are most primitive. There is some improved agricultural machinery used in the north Caucasus, most of which comes from Germany and the United States, but no statistics are available to show the amount imported from the latter country.

The various agricultural societies are doing good work in introducing modern agricultural implements and in keeping small stocks in their stores, such as iron shovels, forks, hand mills for grinding corn, pulverizers, etc. They are also introducing chemical fertilizers and disinfectants.

FORESTS AND THE LUMBER INDUSTRY OF THE CAUCASUS.

The forests of the Caucasus, although distinguished by their great richness and variety, are as yet little worked, and commerce in lumber is only slightly developed. The kinds of timber which are found in important quantities in Transcaucasia are those characteristic of warm climates, such as boxwood (*Buxus sempervirens*), walnut (*Juglans regia*, *parrotia persica*), yew (*Taxus baccata*), etc., but these kinds have comparatively little importance commercially. The most important trees from a commercial point of view are beech (*Fagus sylvatica*), oak (three species, *Quercus pedunculata*, *Q. sessiliflora*, and *Q. castaneæfolia*), hornbeam (*Carpinus Betulus* and *C. duinensis*), birch (*Betuna abba* and *B. pubescens*), elm (*Ulmus campestris*, *U. montana*, and *U. effusa*), alder (*Alnus Glutinosa*, *A. incana*, *A. cordifolia*, and *A. orientalis*), maple (*Acer campestre*, *A. lactum*, *A. plataneides*, and *A. Trautfetteri*), ash (*Fraxinus excelsior* and *F. oxyphilla*), linden (*Tilia intermedia*, *T. platiphylla* and *T. parrifolia*), and poplar (*Populus tremula*, *P. Nigra*, and *P. Euphratica*).

The most useful of these is beech, which grows in great numbers upon the sides of the mountains. The beech of the Caucasus is distinguished by the good qualities of its fiber, and is suitable for the manufacture of furniture, staves for casks, etc. Oak also grows in considerable quantities and is highly valued.

Among the species with acicular leaves are pine (*Pinus sylvestris*, *P. montana*, *P. Saricio*, *P. Maritima*, *P. pinea*, and *P. eldarica*), fir (*Picea orientalis*), silver fir (*Abies Nordmanniana*, the dimensions of which are sometimes enormous), and many kinds of juniper trees. The most important of these commercially are silver fir, pine, and fir.

The forests of the Caucasus, however, are as yet very little worked on account of the lack of ways of communication, which makes it difficult to transport the wood from the mountains to places of utilization. Another obstacle to the development of the lumber industry is the lack of experienced workmen. For these reasons the exportation of lumber from the Caucasus to the European markets is confined to those firms that have sufficient capital to enable them first of all to establish ways of communication in the mountains and sawmills in the less accessible regions. There is one such firm already in operation in the region of Gagry, on the Black Sea coast. The Black Sea coast is in general the region best suited for the development of the lumber industry, as the wood can be worked on the coast, loaded in the ports, and transported by way of the Dardanelles to the European markets.

RAILWAYS AND ROADS.

Little progress was made in road and railway development in Transcaucasia during 1912 except on the Kars-Sarakamysh Railway and on the highways leading out of Kars toward the Turkish frontier, on which work was pushed. A little work was done on the Armavir-Tuapse Railway and extensions of that line are contemplated. These extensions will pass through the most fertile regions of the northern Caucasus. The commune of Armavir has been granted permission to build a local tramway in the village. Surveys were made on the Kakhetian Railway, which is to be built by private enterprise, and the construction of the line has begun. A scheme for constructing a line along the Black Sea coast from Sukhum north is contemplated and a concession for this purpose was granted in 1912. Another scheme under discussion during the past year was one for building the so-called Black Sea-Elbruz Railway from Nevinomiskaya on the Vladikavkaz main line through a series of important villages to the town of Sukhum on the Black Sea. Surveys are now being carried on. The length of the line is to be 200 miles, and a tunnel 4 to 5 miles long is to be pierced at the mountain pass before the railway commences to descend to Sukhum. There is also under discussion a scheme for the construction of a railway over the Caucasus to run more or less parallel to the Georgian Military Road. This railway will have to be built through mountainous country at great expense, and difficulty has been experienced in procuring the necessary funds for its construction. It is reported that fresh surveys are to be made. All the other schemes for railway extensions in the Caucasus are still in abeyance.

The receipts of the Transcaucasian State Railways in 1912 were $17,156,710, which was $1,144,330 more than in 1911. The clear profit in 1912 was $6,081,120, or $930,090 more than in 1911.

No new road construction of importance has been undertaken during the past year in the Caucasus, although there is a great lack of good highways in many districts. As a consequence of this, industrial and commercial development is greatly retarded.

In connection with road improvement, it is estimated that about 100 motor cars were imported into the Caucasus in 1912, mostly from France, Germany, and Switzerland.

HARBOR IMPROVEMENTS.

The construction of the port works at Tuapse was continued by the State during the year and will probably result in the near future in making this an important port. The completion of the Armavir-Tuapse Railway will bring it a heavy traffic. Probably much of the mineral oil production of the Maikop oil fields will be shipped from that port and it is estimated that the total annual shipment of merchandise will reach 100,000 tons.

No other harbor works of importance were carried out on the Black Sea coast of the Caucasus, although there is urgent need for immediate improvements in the port of Batum. This is more important because of the increase of the shipping in this harbor, due largely to the rapidly growing manganese trade.

PUBLIC INSTRUCTION.

Progress is being made in public education in the Caucasus. Here, as in all parts of Russia, public instruction is in the hands of or is directly controlled by the State. The secondary educational system in the Caucasus at the beginning of 1912 consisted of 106 secondary State schools or gymnasia, progymnasia, and nonclassical schools. The largest number (27) of these schools were in the Province of Kuban in the northern Caucasus, and the smallest number in the Province of Kars, where there were only two. Nine similar schools were added to this number during the year. A little more than half of all the schools are for girls. At the beginning of 1912 there were also 180 private schools, and during the year permits were granted to open 44 new ones.

The total number of elementary schools in the Caucasus at the beginning of 1912 was 3,214, and 418 more were added during the year. These schools are insufficient for the increasing population, and a considerable addition to them is contemplated in the near future. Additional grants have been made by the Ministry of Public Education and by the zemstvos in the Caucasus. This money is to be apportioned in the different Governments and Provinces according to the population.

Besides the foregoing schools, there were also 40 schools for the training of teachers, and two others were added during the year. There were 24 industrial schools. During the year surveying and general technical classes were opened at the Baku Industrial School, and a section is to be equipped there in 1913 for training motor-car drivers.

Much attention was paid during the year to the introduction of a system for educating and training teachers in practical education in various kinds of manual labor. Classes were formed for the theoretical and practical study of agriculture, for studying the preservation of fruit, for culinary instruction, and for needlework. Specialists were invited to give practical instruction to teachers in the various branches of industries, and funds were granted by the

zemstvos to enable teachers to visit industrial schools and there acquire practical knowledge. Classes were also formed in physical culture and a two months' course for male and female instructors was opened at Tiflis.

Steps were taken to establish a polytechnic institute at Tiflis. The curator of the Caucasian educational district, by order of the viceroy of the Caucasus, made a series of visits to Russia to inspect some of the higher educational establishments of the Empire to ascertain the requirements for such institute. About $1,000,000 is said to have been contributed by the public for the building. Of this amount the Baku oil producers have subscribed about $200,000. They have recently petitioned the viceroy to have a mining section added to the institute on the ground that mining is the principal industry of the Caucasus, and especially of Transcaucasia.

PUBLIC HEALTH.

There was less serious sickness in the Caucasus during 1912 than in previous years, and the cholera that appeared for several consecutive years up to 1911 was absent. Plague, however, appeared in Astrakhan and Central Asia, and the Russian Government adopted measures of precaution for fear of an outbreak in the Caucasus in 1913. Thirty-two plague stations were opened in Transcaucasia, 8 being in the Government of Baku, 6 in the Government of Elizavetpot, 7 in the Government of Erivan, 10 in the Province of Kars, and 1 in the District of Zakatal.

Epidemics of scarlet fever and diphtheria of particular severity are apparently increasing in the Caucasus and were prevalent in many towns and country districts in 1912. These two diseases are responsible for the considerable increase of the death rate of the urban and rural population, especially among infants.

COOPERATIVE STORES IN THE CAUCASUS.

The growth of cooperative societies in the Caucasus is still in its early stages, except in the north Caucasus (especially the Kuban district), where cooperative stores are in better condition and have found good ground for their development. This can be seen from a comparison of the following figures. On January 1, 1912, there were the following cooperative stores: In Kuban Province, 81; Baku Government, 23; Daghestan Province, 3; Elizavetpol Government, 13; Kars Province, 10; Kutais Government, 24; Stavropol Government, 23; Tersky Province, 16; Tiflis Government, 10; Black Sea Government, 10; Erivan Government, 5.

There is a great difference, however, both ethnographically and economically, between the Caucasus as a whole, as well as each of its separate Governments and Provinces, and the Don Province. Out of 58 societies forming an association in the Rostoff-Don region, 19 belong to 7 Governments and Provinces of the Caucasus and the remaining 38 societies to the Don Province. In the commercial and industrial life of the north Caucasus one of the chief centers is Armavir, the activity of which extends far beyond the limits of the Kuban Province. Owing to its advantageous geographical situation, Armavir has practically a monopoly for the supply of about 40 co-

operative stores distributed in the region of its commercial activity. The following table shows the part taken by Armavir in relation to the cooperative societies by the amount of purchases per year:

Cooperative societies of—	In Armavir.	In Rostoff.	In Moscow.	In other places.
Armavir	$3,000	$3,400	$50	$2,200
Novo-Alexandrovsk	4,000	3,500	2,600	5,700
Voznesensk	15,000			700
Romanovsk		5,000	1,000	13,400
Tchamlik-k	7,800			700
Bekeshevsk	14,500	1,000	500	5,200
Yankulsk	2,000	3,500	2,050	3,200
Rodnikovsk	15,000			
Umensk	12,800			
Maikop	500	2,600	2,600	4,600
Nashirbovsk	7,000			
Ubizhinsk	1,600			
Total, 12 societies	83,200	19,000	8,800	35,700

Thus it appears that the share of Armavir in the total purchases of 12 companies amounts to $83,200, that of Rostoff-on-Don to $19,000, that of Moscow to $8,800, and that of other places to $35,700. Under the head of "other places" are included the smaller centers of the Kuban Province, but they generally receive their goods from Armavir. With regard to the other 25 to 28 companies looking to Armavir as the center of supplies, there is no information at present, but it is well known that the greater part purchase their supplies from Armavir. Therefore, Armavir is a natural center to which come about half of the cooperative societies of the Kuban Province and part of the neighboring societies of the Stavropol Government and Tersky Province. The question of joint purchasing and the organization of a union to unite and direct both the commercial and the noncommercial activities of the north Caucasus is under consideration.

MOSCOW.

[Consul General John H. Snodgrass.]

The Moscow consular district embraces the middle portion of the great central region of Russia, extending from the eastern border of West Russia to the Siberian frontier, and including the principal industrial part of the Empire. The Governments in this district, with their area and population, are as follows:

Governments.	Square miles.	Population.	Governments.	Square miles.	Population.
Kaluga	11,931	1,387,100	Simbirsk	19,093	1,931,700
Kazan	24,564	2,711,000	Smolensk	21,604	1,949,600
Kursk	17,920	3,016,700	Tambov	25,686	3,412,900
Mohilev	18,497	2,214,900	Tchernigov	20,213	2,975,500
Moscow	12,835	3,215,400	Tula	11,943	1,773,700
Nizhni Novgorod	19,771	1,999,300	Tver	24,951	2,177,200
Orel	18,024	2,580,400	Vladimir	18,803	1,895,900
Orenburg	73,186	2,065,200	Voronezh	25,419	3,355,800
Penza	14,983	1,803,900	Ufa	47,065	2,890,700
Riazan	16,175	2,408,400	Yaroslav	13,710	1,218,300
Samara	58,266	3,544,500			
Saratov	32,593	3,094,700	Total	547,232	53,622,800

The population and chief features of importance of the leading cities of the Moscow consular district are as follows:

Towns.	Population.	Industries, etc.
Briansk, Orel Province.	28,000	Railway junction point; arsenal, iron foundry, glassworks, boat-building yards, cloth, leather, and spirit factories.
Buguruslan	12,000	Agriculture and horticulture; fair; tallow, leather, and cattle trade.
Bui	73,000	Agriculture and horticulture; cabinet work.
Busuluk	14,000	Tanning, copper smelting, sheepskin trade.
Bugulma	8,000	River port; trade in Middle-Asiatic goods.
Cheliabinsk	45,000	Railway center, terminal Trans-Siberian Ry.
Eletz	46,000	Tanning, iron foundries, milling, lace making.
Gomel	47,000	Trade center; sugar refineries.
Kaluga[1]	52,000	Trade center; leather and sailcloth factories.
Kazan[1]	162,000	Entrepot for trade between European Russia and Siberia and Bokhara; educational and publishing center; leather, cloth, cottons, soap, iron and steel wares, bells, wooden articles.
Kursk[1]	57,000	Trade center; tanning, manufacture of candles, soap, tobacco, etc.
Mohilev[1]	50,000	Leather, linseed oil, flour, and tobacco factories; trade center for fruit, vegetables, and fish.
Moscow[1]	1,335,000	Large cotton, woolen, and silk textile mills; factories for metallic wares, machinery, paper, clothing, shoes, carriages, food products, wooden articles, etc.; tanneries; tea distributing center of Europe; educational center.
Nizhni Novgorod[1]	92,000	Seat of great annual fair.
Novgorod[1]	23,500	Importance chiefly historical.
Orel[1]	82,000	Entrepot of the Russian grain trade.
Orenburg[1]	74,000	Barter trade with Central Asia; ships meat and other animal products; soap and tallow factories.
Penza[1]	64,000	Paper, lumber, and flour mills.
Riazan[1]	36,000	Agriculture; hides and skins; agricultural implements.
Rybinsk	27,500	Volga River freight trade.
Samara[1]	95,000	Grain storehouses; milling and some manufacturing establishments.
Saratov[1]	198,000	Trade and industrial center.
Sergievo	20,000	Religious souvenir factories.
Simbirsk[1]	47,000	Trade center.
Smolensk[1]	63,500	Little commercial or industrial importance.
Starodub	19,000	River port; horticulture; tanneries; flax and grain trade.
Syzran	36,500	Commercial and industrial center.
Tambov[1]	52,000	Soap and tallow.
Tchernigov[1]	30,000	Railway and river traffic center; banks; commerce; industries.
Torzhok	15,500	Gold and silver embroideries.
Tula[1]	110,000	Government firearms factories; ornamental metal wares, accordions, leather, soap.
Tver[1]	60,000	Industrial center, especially cotton.
Ufa[1]	64,000	Agricultural center.
Verkne-Uralsk	13,500	Mining.
Vladimir[1]	32,000	Small trade.
Voronezh[1]	65,000	Industrial center.
Vyshny Volotchok	17,000	Trade center.
Viazma	15,500	Railway junction point; trade center.
Yaroslav[1]	72,000	Important cotton manufactures; tobacco, white lead, and other factories; active trade.
Zlatoust	21,000	Extensive imperial establishments, including iron and steel works and firearms factories.

[1] Provincial capital.

EXPORTS TO THE UNITED STATES.

The value of the exports to the United States, declared at the Moscow consulate general in 1911 and 1912, is shown by the following table:

Articles.	1911	1912	Articles.	1911	1912
Alcoholic products:			Furs:		
Kummel	$1,736	$5,757	Raw—		
Other	503	2,637	Sheep	.....	$13,557
Blood albumen	1,531	1,547	Weasel	.....	17,210
Casings	12,344	.....	Wolverine	$224	3,874
Caviar	.....	5,189	Other	1,720	5,111
Church articles	4,271	6,316	Trimmings	.....	8,175
Drugs:			Hair, animal	157,967	172,264
Cantharides	3,590	2,087	Hemp and flax products:		
Ergot	4,258	14,703	Crash	46,715	26,140
Glycerin	122,894	10,961	Linen goods	.....	1,765
Lycopodium	9,688	1,396	Hides and skins:		
Other	.....	716	Colt	190,021	143,723
Furs:			Goat	59,152	3,137
Dressed—			Horse	.....	30,427
Lamb	15,057	2,158	Pony	.....	3,416
Squirrel	12,275	.....	Sheep	28,584	3,249
Other	2,876	2,100	Other	1,120	3,225
Raw—			Oil, machine	.....	10,169
Bear	708	3,073	Potato flour	4,113	.....
Ermine	14,645	5,046	Rubber waste	34,023	21,882
Fox	54,364	62,121	Silverware	5,392	12,060
Hare	19,392	906	Toilet goods	4,493	3,879
Karakul	.....	16,805	Wearing apparel	.....	4,661
Lamb, Persian	171,009	538,648	Wool	730,972	1,389,034
Lynx	9,219	2,299	Camel hair	328,276	790,843
Marmot	111,385	75,294	All other articles	14,602	10,833
Mink	1,523	8,999			
Sable	4,918	30,516	Total	2,190,689	3,478,676
Squirrel	5,129	788			

American goods to the value of $888 in 1911 and $130,099 in 1912 were returned to the United States. American horses sent to Russia for exhibition purposes made up $125,000 of the returned American goods in the latter year.

ODESSA.

[Consul John H. Grout.]

The consular district of Odessa embraces the regions bordering on the Black and Caspian Seas and on the Caucasus, consisting of the following Governments:

Divisions.	Square miles.	Population.	Divisions.	Square miles.	Population.
Astrakhan	90,958	1,246,000	Kief	19,657	4,556,000
Bessarabia	17,128	2,441,200	Podolia	16,209	3,743,700
District of Don Cossacks	63,473	3,496,300	Poltava	19,248	3,580,100
Ekaterinoslav	24,455	3,061,300	Taurida	23,291	1,876,200
Kharkof	21,021	4,245,900			
Kherson	27,312	3,447,100	Total	322,752	31,693,800

The population and chief features of commercial interest of each of the principal cities of the Odessa consular district are shown by the following table:

Cities.	Population.	Industries, etc.
Alexandrovsk	29,000	Railway and river traffic; brandy distilleries; grain trade.
Astrakhan [1]	147,000	Fish trade; chief port of Caspian Sea and entrepot for trade of European Russia with Turkestan, Persia, and a large part of Transcaucasia.
Azof-on-Don	26,500	Seaport.
Bakhmut	33,500	Coal and salt mining.
Berdiansk	29,500	Seaport.
Ekaterinoslav [1]	157,000	Center of iron and steel industry; large flour mills; commerce.
Elisavetgrad	69,500	Flour mills, tobacco factories, etc.
Eupatoria	20,000	Seaport.
Kamenets-Podolsk	40,000	Commercial center.
Kharkof [1]	206,000	Cigar and tobacco, spirits, soap, and sugar factories; trade center; important fairs.
Kherson [1]	65,000	Trade center.
Kief [1]	323,000	Important beet-sugar center; trade and banking.
Kishenef [1]	129,000	Vine and tobacco culture.
Kremenchug	63,000	Flour and lumber mills; agricultural machinery and tobacco factories.
Krivoi-Rog	14,500	Iron mines.
Mariupol	32,000	Seaport.
Nikolaief	99,000	Seaport; large grain exports.
Nikolaiefskaya	31,000	River port; cattle breeding; grain and salt trade.
Novocherkask [1]	32,000	Distilling; anthracite mines near by.
Novogeorgiefsk	12,000	Silk mills; tanneries; wood and cattle trade.
Novorossisk	42,000	Seaport; petroleum-shipping point.
Odessa	500,000	Chief seaport of Russia; large grain trade; mills; ironworks; match, sugar, leather, textile, soap, chemical, starch, and other factories.
Poltava [1]	50,500	Not prominent commercially or industrially.
Rostoff-on-Don	123,000	Commercial center and shipping port for wheat, etc.; distilleries, mills, tobacco factories, and ironworks.
Sebastopol	68,000	Seaport, shipyards; some manufacturing.
Simferopol [1]	62,000	Trade center.
Taganrog	62,000	Seaport; flour, tobacco, leather, and other industries.
Theodosia	31,000	Seaport; wheat exports.
Voznesensk	18,500	Agriculture; agricultural implements.
Yalta	23,000	Seaside resort.

[1] Provincial capital.

WET WEATHER INJURED 1912 HARVESTS.

The Odessa consular district is primarily an agricultural rather than an industrial region, and its prosperity is dependent upon harvest conditions. It is also an important commercial region, having the best harbor facilities of any port of Russia. Adverse weather conditions severely injured the field and orchard crops of the district in 1912, the maize (corn) and sugar-beet crops being particularly hard hit. This region generally has a drought at harvest time, and no provision is therefore made for artificially drying the products. As a result of the wet weather at harvest time, therefore, over extended areas it became impossible to thrash grain, and a large part of the crop which had been hastily gathered into stacks either sprouted or became weathered and musty, so that while the quantity was still good, the quality of the crop was seriously impaired. The cultivation of maize and sugar beets centers in this district, and the injury to the former crop is particularly regrettable, inasmuch as more care and attention has of late years been given to this cereal than heretofore, and its cultivation has been carried on after the American plan.

The deterioration in the sugar beets which resulted from their being taken from the wet ground and piled up exposed to the damp weather was serious, and was increased by a severe early frost which

made it necessary to work up the roots in the factories before they had time to rot. The roads of southern Russia, however, can not be used during continued wet weather, and transportation practically ceased toward the end of the year, so that much of the beet crop had to be left in the fields to continue to lose its sugar content. The resultant loss is variously estimated, but it can not be far from $25,750,000. The prediction made in November by the head of one of the largest refineries in this district that scarcely six-tenths of the July estimate of 1,800,000 tons of sugar would be realized was practically fulfilled. Prices of sugar at the end of the year had risen and bade fair to go still higher during 1913.

HAY, HOPS, AND OTHER CROPS.

While the hay crop in some districts of Russia in 1912 was a fair success, it was scarcely such in this district, although the returns were not as disappointing as in the crops previously mentioned. The potato crop was barely average in quantity and below normal in quality. Fruit reached only a fair average in quantity, while its quality was below that of former years, little of it being fit for drying or preserving. The fodder-seed crop was a partial failure, and few sales were made, as compared with normal seasons, although prices ruled high with a large demand.

The Russian hop crop for 1912 was estimated by growers at 4,914 tons, of which fully three-fifths was produced in this consular district. The varieties grown here are among the most valuable, but on account of the prevailing weather conditions a good deal of the crop was less than half first class, while the rest was rated at second class or damaged. First-class hops brought from $11.33 to $12.88 per pood (36 pounds), while the poorer qualities sold at from $5.15 down to $1.55.

WOOL TRADE DECLINING.

Not many years ago wool was one of the most important items of trade in this consular district. During the past few years, however, there has been a great decline, and both the production and the trade are but fractions of what they once were. The rapid growth of population is the chief cause of this change, as it has been attended by an increase in the purchase value or rent of land. Cereals give better returns per acre than does sheep farming, and the latter is being steadily driven farther east, where there are still lands that can be profitably grazed under present conditions.

The year 1912 opened with a larger stock of wool than usual in the hands of dealers and producers, and prices held firm on account of the high cost of production. The result was almost complete inactivity in the trade in the better classes of wool. The spring shearing in 1912 began two months later than usual, on account of the late season and cold rains, and the condition of the wool and the quantity obtained per sheep were considered satisfactory. The total clip, however, was smaller than that of the preceding year because of the reduced number of sheep.

Previous to shearing time the sales of wool were few and small. Soon after shearing started there was considerable activity at Rostoff-

on-Don, which is the leading wool market of this district. Nearly 21,600,000 pounds of wool, or about 75 per cent of the total supply of 28,800,000 pounds, was bought up. During the same period in 1911 only about 14,400,000 pounds, out of a total of 31,320,000 pounds, passed into the hands of consumers. All grades except only the very best kinds had to be sold cheaper than in 1911, the reduction in many cases amounting to 77 cents per pood. The 1912 wools sold at $3.35 to $6.70 per pood, according to quality.

The wools coming into the Odessa market were superior to those of 1911, but had nevertheless to be sold for prices 50 to 77 cents per pood lower than in the preceding year. The difference was not so great as that prevailing at the annual fair at Warsaw later in the year, when prices were $1.33 to $2.39 per pood less than in 1911.

The Troitskaya fair at Kharkof was a greater success than that of 1911. At least 1,346,000 pounds of wool changed hands, although the prices for Spanish wool only ranged from $18.54 to $21.63 per pood, and for unwashed from $4.89 to $6.44 per pood, while in 1911, the corresponding prices were $21.12 to $22.40 and $5.15 to $6.70, respectively. After the bulk of the wool had passed out of the hands of the producers, prices improved, and the dealers realized fair profits. When it was realized that the autumn clip on the lower Volga was considerably smaller than that of 1911, prices of even coarse wool went up, reaching $6.90 to $7.34 per pood. Exports in 1912 reached 33,984,000 pounds, of which 20,200,000 pounds went to the United States, as against 23,004,000 pounds in 1911, of which the United States took 11,700,000 pounds.

FAILURE OF FODDER CROPS—SMALLER FARMS.

The complete failure of fodder crops and the insufficient supply of straw and chaff during 1911 necessitated the reduction of the stock of cattle, which could not be conveniently carried through the winter. With the coming of hope for a good year in 1912, these sales, many of which had been made at a loss, decreased, and an attempt was made to replace the cattle sold. The resulting dearth of cattle in the meat market raised the prices of meat. Unfavorable weather conditions in the autumn of 1912, with the failure of fodder crops, again changed the situation, and caused farmers to again part with some of their stocks, particularly in the Provinces of Kharkof, Taurida, Bessarabia, Kherson, Tchernigov, and in some parts of Ekaterinoslav and the Don Territory.

The Imperial South Russia Society of Agriculture and Horticulture has experimental fields near Odessa, under the supervision of Mr. W. G. Rotmistrov. Many interesting results are said to have been obtained, but the teachings of the farm do not yet seem to have passed into the practical life of the farmers. Nearly all of the work in the experimental fields is devoted to a study of dry farming under a rigorous climate.

The tendency for land to be broken up into small holdings is becoming steadily more marked. Farms range from 20 to 60 acres and many of the small plots are from 1 to 10 acres each. The smallest holdings do not permit the keeping of a horse or cow, except under some form of cooperation with neighboring farmers, and the peasants are repeatedly urged to keep a pair of goats or Russian milch sheep.

Few Russians relish either the flesh or the milk of goats, and the period during which the sheep give milk is comparatively short. The success of poultry raising on a considerable scale on these small holdings is problematical. The long cold season may easily do away with all the profits, especially as the use of carrots, potatoes, beets, and other roots as subsidiary foods does not seem to be well understood. The advocates of larger holdings, who are becoming more and more numerous, point out that the yield of grain per acre on the small holdings is less than that on the larger ones, because of the lack of proper fertilizers and the impossibility of using modern machinery and implements, except through cooperation.

HEALTH CONDITIONS.

Several diseases were noted among domestic animals in this district during 1912, but none of them spread widely or caused ruinous loss. Probably the most serious was the epidemic of swine fever, which occurred in Bessarabia, Kherson, and other Provinces, but the disease remained localized in a few places. Anthrax, although sporadic and diligently hunted down, was a source of continual anxiety to veterinary surgeons. Glanders continues to exist in all the Provinces of this district, and is most frequent among horses belonging to the poorer peasantry. All horses found to be afflicted with glanders are killed and the utilization of any part of the bodies is strictly forbidden, except in the few municipal laboratories where they can be worked up into artificial manure, etc. Among sheep there were a few cases of sheep pox, and a great many of sheep scab.

The public health continued in a satisfactory condition throughout the year. The few cases of bubonic plague that occurred in the extreme southeastern part of this district and in parts lying east and south of it were soon gotten under control. Funds for combating it were liberally provided by the Government, and the disease was apparently stamped out. The origin of it seems to have been traced to certain small burrowing rodents of the gopher variety, *Spermophilus citillas*, variously known as steppe marmots, susliks, or ovrazhoks, and energetic measures for the extermination of that animal were planned. The rodent is also injurious to crops, and is most prolific. It can not be turned to any useful account and its skin is practically valueless.

FISHERIES—CAVIAR EXPORTS.

The great wealth of the fisheries of this district have for many years been drawn on heavily, with the result that the stock has been reduced and the price of fish has risen. Various restrictive laws are now being framed to remedy this condition, and serious attention has been given by the Department of Agriculture to the many large lakes and Danube backwaters in southern Bessarabia, which formerly held enormous quantities of fish. The recent rapid silting of the waters connecting the lakes with the Danube has changed their nature to such an extent that the kinds of fish formerly found there can not now exist there freely. It is planned to form special channels to bring the waters of these low-lying lakes into circulation with those of the Danube. The artificial propagation of fish has already produced good results in Poland.

Astrakhan, in this consular district, is the source of most of the caviar used in and exported from Russia. In 1912 the catch was small and the caviar obtained did not aggregate more than 540 tons, of which 126 tons were from sturgeon, 306 tons from stellated sturgeon, and 108 tons were pressed. Of the pressed caviar, about 72 tons were consumed in Russia, and the rest was exported, principally to Roumania, England, and France. The exports of granulated sturgeon caviar went chiefly to Germany, Austria-Hungary, and the United States. About 180 tons of stellated sturgeon caviar was exported to the same three countries.

THE IRON INDUSTRY—COPPER.

Iron mining and smelting showed most satisfactory development during 1912. The statistics for the whole year are not yet available, but during the first half of 1912, 2,247,266 tons of cast iron, an increase of 339,156 tons over the output for the corresponding period of 1911, were produced. It is believed that the result for the whole year will more than double that of the first half, and at the end of the year there was every indication that 1913 would show still more improvement. Among the causes of this condition are the rapid increase in the construction and extension of city and town tramways, the manufacture of machinery, and the extension and double tracking of steam railways. Inasmuch as the production of pig iron centers in this consular district, this unusual activity has had a beneficial effect on this region. To meet the growing demand the output of pig iron had to be increased, and nearly all of the furnaces were worked to their maximum capacity. Even then they could not keep pace with the demand, which accounts for the unusual increase in iron imports. The inability of the pig-iron producers to meet the unusual demands on them led to an agitation on the part of the users of pig iron for admission of foreign pig free of duty, but this was opposed by the smelters, who state that they are preparing to increase their outputs. Double-T iron for construction work showed the greatest increase in sales, followed by fashioned iron, roofing sheets, and large rails. All iron products increased in price except rails for the Government railways, which are kept at a stationary rate of 56 cents per pood by Government rule. There were no large scale strikes in the iron industry to interrupt production.

Copper has formed an important item of consumption in this district during the past two or three years, and, with the extensive electrification of tramways, and the extension of telephone lines and cables, this demand must continue for some years to come. The importation of copper from abroad is attributed to a demand which exceeds the domestic production and also to the fact that most of the copper imported is electrolytic, little of which is produced in Russia at present. Several works here are preparing to meet the demand for this kind of copper and the trade will probably undergo important changes in the near future.

COAL SHORTAGE.

Although the principal coal mines of Russia, those of the Donetz Basin, are located within this consular district, this section in common with the rest of Russia faced a coal shortage at one time during

1912. For many years conditions have been unfavorable to the Russian coal producers, and attempts have been made to promote exportation in order to compensate for the declining home trade. In 1912, however, the situation changed and, owing to the great demand from smelting works and other industries, the coal strike in England, and the rise in prices and freights incidental thereto, orders from the Baltic Provinces and St. Petersburg, which were formerly given to Welsh mines, were diverted to Russian producers. As imports from the United Kingdom to the Black Sea almost ceased the factories and steamship coaling stations here were made dependent on the Donetz Basin for their supplies. The reserves that had been accumulated at the mines rapidly disappeared and the mines were hard pressed to meet the demands that poured in. As is usual in Russia during the summer months, there was a scarcity of laborers and the late and protracted harvest season kept the miners away longer than usual. The higher wages offered by metallurgical and other works also drew away many laborers and the Donetz mines were unable to fulfill contracts made during the spring and summer. Coal prices rose until the end of the year and many factories were obliged to partly or wholly shut down for the winter. Black Sea prices and freights on outside coal were prohibitive, the freight alone amounting to $3.65 per ton.

THE ODESSA TIN-PLATE INDUSTRY.

For 40 years, beginning with 1867, South Russia was the center of the Russian tin-plate industry, and Odessa had more tin-plate factories than all the rest of the Empire. Black plate was imported from Wales, the importations into Odessa alone averaging 125,000 to 150,000 boxes, weighing from 112 to 200 pounds per box. Since 1903 these imports have decreased rapidly, evidently as a result of the beginning of black-plate manufacture in Russia.

Iron ore suitable for the manufacture of black plate was discovered in 1902 at Perm, near the foot of the Ural Mountains, on land belonging to some of the richest families in Europe. Iron and tin plate works, including a galvanizing plant, were constructed and a colony of workers was brought from Wales. At first the product was inferior in quality, but the methods of manufacture were soon perfected and up to 1912 the new works controlled the Russian market. Under this competition all but two of the Odessa works were closed, the two that remained in operation having a large trade in printed and stamped boxes for preserving, packing tea and artificial butter, etc.

Since April, 1912, however, conditions have been changed. Railway freights rose considerably about that time, cutting into the profits on tin plate sent into southern Russia from the northern part of the country. The southern manufacturers returned to the English market for their supplies, and in the 11 months beginning April, 1912, notwithstanding the general business crisis in Russia, the two factories in Odessa had a turnover amounting to 40,000 boxes of tin plate. One of these plants had a Government contract for supplying 2,000,000 boxes of different sizes for packing food products, presumably for army use.

IMPROVED FINANCIAL CONDITION OF THE IRON TRADE.

Many if not most of the iron-smelting works in this district underwent a period of serious depression a few years ago which was attributed, apart from local causes, to a great extent to the haste with which some of the concerns had been organized. Millions of foreign money had been drawn into the country for undertakings which, under ordinary conditions, could give but small returns. About four years ago, however, renewed railway construction and other work on a large scale brought an increased demand for materials at advancing prices. Iron smelters benefited greatly from this activity and rapidly increased its volume of output without, however, cutting prices. They had prepared for this period by buying up coal and iron mines, as well as other metallurgical works, such as factories making wire, wire nails, sheet iron, etc., so that the profits formerly scattered along various stages of production are now gathered together and conflicting interests have been harmonized. The principal concerns in this field are the South Russian and Dnieper works, the Nikopol-Mariupol Co., the Russian-Belgian Co., and the Donetz-Younger Co. The first-named firm increased its dividends from 12 per cent in 1910–11 to 20 per cent in 1911–12; the second raised its dividend rate from 7.5 to 12 per cent in the same period; the third increased its rate from 9 to 12 per cent; and the fourth paid dividends of 5 per cent in 1910–11 and 8 per cent in 1911–12. Inasmuch as the improvements in production mentioned above were in operation during only a portion of the time covered by these dividends, satisfactory results are predicted for 1912–13.

SALT PRODUCTION.

For several generations past the gathering of salt from the numerous large salt lakes and marshes fringing the northern shores of the Black and Azof Seas and in the depressions north of the Caspian Sea has been an important industry of this consular district. The Government levied a tax upon salt production which brought in a large revenue until it was abolished in the last months of the reign of Alexander II. The removal of this tax stimulated the industry and the output was soon nearly doubled. A syndicate was formed in Eupatoria which obtained control of the salt industry for some time, with little competition, but later fell to pieces.

Present prices of salt in Odessa, the chief market, range from 8½ to 9 cents per pood for fine ground salt, f. o. b. railway trucks. The local salt interests are now trying to secure such railway rates as will enable them to undersell in Poland and western Russia the rock salt and that obtained from brine pumped up from layers of rock salt.

BANKING AND BUSINESS.

Taken altogether, business during 1912 was not as good as during the previous year. The number of bankruptcies increased, but more especially among small firms. Partly owing to the fact that the banks had heavily curtailed credits during 1911, there was no further credit reduction during the first half of the year. Toward the end of the year, however, they stopped many more credits. Rates of

interest remained stationary until about December 15, when the Imperial Bank raised its rate from 5½ to 6 per cent. This, of course, influenced the rates of private banks, which are always from 1 to 1½ per cent higher than those of the State bank.

Notwithstanding the Balkan war, foreign exchange showed only slight variations. At the beginning of the war it rose to 9.50 rubles per pound sterling, but in May, 1913, it was at its former average point, 9.45–9.46 rubles. Rates of exchange on sight drafts upon the United States usually fluctuate between 1.9275 and 1.9350 rubles per $1. At one time during the year the rate reached 1.9375. During 1911 there were several bank failures, confined mostly to small concerns, but there were few in 1912, although, naturally, profits were not very encouraging.

The exportation of agricultural produce, nearly all of it in its crude or only partly manufactured state, is the principal business of Odessa and most of the other Russian ports on the Black Sea and Sea of Azof. The year 1912 was unusually disappointing to this business. First, there was the protracted closure of the Dardenelles owing to the Turko-Italian War, and then came the Turko-Balkan troubles. Vessels arriving were few and far between and, as a large proportion of the grain of the last crop here is unfit for exportation, no particular revival can be looked for during 1913. As a result of these conditions many workmen, such as dock laborers, grain carters, etc., were out of employment during 1912.

Business, considered from the point of view of the individual merchant, was not profitable, due possibly to the large number of commercial houses.

FOREIGN CAPITAL IN SUGAR MILLS—BUILDING OPERATIONS.

A recent publication calls attention to the increasing interest in Russian sugar mills that is being shown by foreign capital. It appears that up to 1910, one factory in Podolia Province was owned by a Belgian company. In that year Belgian and French capitalists secured control of two other works, and in 1911 the number of works controlled by foreigners had risen to seven, with Germany beginning to be interested in the industry. Four more works were taken over completely and controlling interests in seven others were secured by foreign capital during 1912. The Belgian company, Sucrier General, at present owns shares in five Russian sugar factories, valued at $1,158,000.

In building construction 1912 showed a considerable advance over the preceding year in several parts of this consular district, especially in the cities of Kief, Odessa, and Kharkof. For several years past unsettled conditions and a dearth of capital had brought construction work to a standstill. Lodgings and business buildings became scarce and dear, but in 1911 the trade began to revive, and many fine new tenement houses and business blocks were built during 1912. A noticeable feature of the new buildings is the use of sheet glass of larger dimensions than heretofore, although the general style of architecture is heavy. Most of the buildings are constructed of brick and cement, but there is a movement toward the use of iron and concrete, as in the United States, and several structures so built are now to be found at Kief.

TELEPHONES, ELECTRIC LIGHTS, AND RAILWAYS.

During 1912 there was a considerable increase in the telephone service, the electric-lighting plants were improved, and tramway systems were electrified. The Belgian company holding the franchise for providing Odessa with public and private lighting service, and also for the control and electrification of the existing tram lines, had its work nearly completed by the opening of 1913. The company expects that by the time the tramway work is completed at least $6,695,000 will have been expended. It is stated that the Odessa line, which has been in operation for more than a year, although not fully completed, is not as profitable as that at Riga, controlled by the same company, although the latter city has 100,000 less population and a smaller mileage of track. As regards profit per kilometer, Odessa ranks lower than St. Petersburg, Moscow, Riga, Warsaw, Kief, Kharkof, and Rostoff-on-Don.

The Odessa-Bakhmut Railway is steadily approaching completion. It will give Odessa a more direct connection with Moscow. Besides its ultimate importance, its construction was of great importance during 1912, as it provided work for a large number of people. The Government has also given its consent to the construction of two more railways from Odessa—the Odessa-Vilna and the Odessa-Zhlobin. The last named was completed from the northwest as far as Zhlobin some years ago, and will now be extended under the supervision of the ministry of railways to connect with the main line of the Southwestern Railway. The Odessa-Vilna line will connect the northwestern region with the Black Sea and will be built by private capital.

NEW INDUSTRIAL ENTERPRISES.

A plant for the manufacture of corks, linoleum, and capsules was one of the important new enterprises established in the Odessa consular district during 1912. The works, which have been built for a German firm, comprise 18 buildings and occupy a large plot of land. They are from one to four stories in height. Germans, Swedes, and Russians will be employed, and when running on full time the plant will provide work for 2,000 hands. The raw material will be brought from Spain, Australia, and other countries.

Another new factory was constructed here during 1912 by an American concern for the reclamation of waste rubber. For a number of years past large quantities of old rubber shoes, etc., have been shipped to the United States under the head of rubber waste. This material had to pay a duty of 77¼ cents per pood at the port of export. Upon arrival in the United States the rubber was reclaimed. An American firm engaged in this reclamation undertook, in 1912, to reclaim this rubber before shipment, inasmuch as the reclaimed rubber is not subject to an export duty. In 1911 the waste-rubber exports were valued at $364,129 and in 1912 at $388,676, but in the latter year reclaimed rubber to the value of $26,084, the first produced by the new plant, was also exported.

A company has been formed by an Odessa banker for the construction of a cold-storage warehouse. A large plot of ground on

the outskirts of the city was purchased, and plans were made for beginning construction work in the spring of 1913. The warehouse is planned to hold 450 tons of meat and about the same amount of poultry, game, milk, cheese, and eggs, and 540 tons of fish. The ice plant is expected to furnish 216 tons of ice every 48 hours.

It is reported that the principal pottery works in this district have agreed with those of other sections to an increase in prices, so that their wares for technical purposes will cost at least 100 per cent more than formerly.

LABOR CONDITIONS—SALE OF AGRICULTURAL MACHINERY.

Labor conditions in this district are somewhat peculiar. Workmen complain of the scarcity of employment, while employers unanimously assert that since 1905 it has been impossible to get any steady work out of their laborers. It is claimed that the actual work done by a laborer is three times as expensive as it was less than 10 years ago.

Important American interests are identified with the sale of agricultural implements and machinery here. Three of the largest American companies maintain important branch houses at Odessa, Kharkof, Kief, Rostoff-on-Don, and other cities, and each of these branches has a corps of trained salesmen and demonstrators, who constantly canvass the territory assigned them. So well are these branches organized that they succeeded in holding their trade during 1912 in spite of the adverse agricultural conditions. The manager of one of the largest houses here states that business is increasing each year, and several representatives in the trade are of the opinion that the agricultural implement business in Russia is still in its infancy, in spite of the great progress that has been made. The demand for motor tractors increased, and under fairly favorable agricultural conditions will probably show still further gains. These tractors were at first regarded with skepticism by the large landowners and farmers here, but the capability of the tractors was shown by demonstrations, many of which were conducted under adverse conditions, and the market appears promising for them. American hay-baling presses are also just making their appearance here and are almost certain to meet with a large sale among the Government authorities and large landowners, at least.

AMERICAN AUTOMOBILES IN FAVOR.

The sale of automobiles in this district is increasing steadily, and at present some 18 or 20 different makes, including American cars, are represented here by local agents. The American cars are well regarded, and more would be sold were it not for the fact that many foreign makers give long credits, while the American houses require almost spot cash. The trade in American automobiles is increasing slowly but surely, however. There is much to be done here by such American manufacturers as are willing to go to the expense of sending representatives to canvass the field personally, ascertain the market conditions, and select reliable agents, but for others, attempts at sales here are likely to be either disappointing or to result in only a

minimum amount of trade. To sell American automobiles here except through a reliable agent in the field is not advisable.

In the endurance test of the Odessa Auto Club held in September, 1911, 16 makes were entered, including German, French, English, and American, and the American car was awarded the cup. The condition of the cars at the end of the race, rather than their speed, decided the contest. The run was from Odessa to Sebastopol and return, nearly 795 miles, and the cars were closely examined by a committee at each stop. The roads were in fairly good condition, although there were a number of very difficult stretches. Four cars returned to Odessa without marks against them, and the cup was awarded to the American car on a further examination.

Automobiles for carrying freight are beginning to appear here and in 1912 there were two or three in use. The present year will doubtless see many additions to this number.

AVIATION—MARKETS FOR AMERICAN GOODS.

Aviation claimed considerable interest in this district during 1912. While there are as yet only two or three machines owned and operated by private persons, the Russian Government was engaged in testing various makes at Simpferople. The Government maintains a school for the instruction of its officers there, and has hangars accommodating at least 100 aeroplanes. Early in the year an American company demonstrated its machines there and, as a result, the Russian Government has already bought several.

Several makes of American shoes are on sale here. It can not be said that large sales of them are being made, inasmuch as they are only to be found in haberdashery and other shops selling many other lines of goods. It is believed that if a shop devoted entirely to American goods were to be opened in Odessa a good trade could be built up. Other cities in the district would follow. Many minor lines of American manufacture are to be found here, principally small wares, but these, as a rule, reach here only through the medium of German distributing houses, whose agents frequently canvass the field.

FOREIGN TRADE OF ODESSA.

During the year there were many inquiries for sunflower-seed oil from American merchants, but none was exported. Several years ago large quantities of sunflower seeds were shipped to the United States from this district. Of late years, however, little of this article has been dealt in.

Exports of broom corn have increased to a marked extent, and the same may be said of the shipments of caviar to the United States. Tea is imported from Ceylon, India, and China, being handled by several large local houses. The exportation of this tea, blended to suit the Russian taste, to the United States is increasing, although prices are somewhat higher than at home. In the exportation of wool there was an increase over 1911 amounting to $141,797. Exports of cigarette tobacco to the United States fell off during the year. In 1912 there were no shipments of cattle hides.

The principal imports into and exports from the port of Odessa in 1912, in tons of 2,000 pounds, were as follows:

Articles.	Tons.	Articles.	Tons.
IMPORTS.		EXPORTS.	
Agricultural implements and machinery	7,287	Breadstuffs:	
Bark, tanning	5,576	Barley	272,686
Bricks and tiles	3,665	Bran	9,067
Cement	19,596	Buckwheat	147
Coal	1,490	Flour	20,868
Coffee	2,808	Maize	274,491
Copperas	373	Oats	1,866
Copra	27,681	Rye	87,577
Cork	6,528	Wheat	108,126
Enamel ware	256	Fish and fish products:	
Fish, prepared	1,362	Salted	2,129
Fruits	44,735	Caviar	1,414
Iron:		Hides	654
Cast	2,519	Oil cake	39,848
Manufactured	4,669	Spirits, gallons	5,594,432
Jute	10,432	Tallow	112
Lead	1,913	Seeds:	
Nuts	13,269	Hemp	673
Oil, mineral	1,672	Linseed	2,957
Paper	206	Rape	6,983
Paints	1,344	Other	2,545
Rosin	3,450	Sugar	76,536
Spices	3,551	Vegetables:	
Steel	938	Beans	8,351
Tea	4,629	Lentils	2,853
Tin, slabs and bars	582	Peas	34,519
Tools	1,090	Wood:	
Wax	1,209	Timber	102,495
Wine and spirits	1,087	Staves	7,165
Wool	15,771	Wool	898

EXPORTS TO THE UNITED STATES.

The value of the exports to the United States invoiced through this consulate and consular agency at Rostoff-on-Don during 1911 and 1912 is given in the following table:

Articles.	1911	1912	Articles.	1911	1912
Bottles	$1,197	.....	Rubber—Continued.		
Books	.....	$1,166	Waste	$364,129	$388,676
Caviar	70,837	274,056	Seeds:		
Cork shavings	1,569	.....	Clover	1,665	.....
Corn, broom	417	2,943	Millet	1,306	.....
Drugs:			Sugar beet	27,352	59,030
Clover tops	1,419	3,335	Sunflower	989	1,372
Dandelion roots	1,286	591	Skins:		
Henbane	753	556	Calf	28	8,131
Poppy seeds	.....	163	Colt	12,825	1,622
Fish:			Fox	936	141
Dried	1,845	.....	Goat	.....	8,164
Salted	2,314	471	Hare	1,416	.....
Fruit	1,432	138	Lamb	244	.....
Glue stock	4,315	1,177	Tea	77,263	92,198
Glycerin, crude	40,614	55,647	Tobacco, cigarette	17,468	10,542
Hair, horse	6,720	.....	Vegetables:		
Household and personal effects	6,781	.....	Beans	4,337	57,776
Lace goods	.....	1,141	Mushrooms	2,009	120
Nuts	297	663	Peas	112,025	5,264
Oil, fusel	144,313	136,701	Wool	362,635	504,434
Rope	.....	4,603	All other articles	3,072	2,039
Rubber:			Total	1,275,808	1,648,945
Reclaimed	.....	26,085			

From the above it will be seen that the declared value of goods shipped from this consular district to the United States during the year 1912 shows an increase over the previous year of $373,345, which is the largest for the past five years. Could the value of goods not declared in this district but invoiced at other ports com-

ing originally from this district be ascertained, the figures for 1912 would without doubt be much increased. The list of articles shipped from Rostoff-on-Don comprised but four items, but in volume and value they were large and in each case showed an increase over the figures for the previous year. They comprised caviar, to the amount of $274,055; tobacco, $3,585; rubber waste, $161,052; and wool, $421,719. Almost all of the caviar shipped to the United States is now being invoiced at this agency, whereas most of it was formerly declared at other ports.

GRAIN EXPORT TRADE DEPRESSED.

At every port on the Black Sea the grain-export trade was depressed, and this depression rested most heavily on those ports that are almost wholly dependent on this trade. Odessa, Nikolaief, and Kherson, the three most important ports of southwestern Russia, exported altogether about 2,380,000 short tons of cereals, an amount that a few years ago would have meant only a reasonably good season for Odessa alone. In those days the three ports cooperated, and there was practically no competition. Odessa was then practically the only port that ocean vessels could safely enter, and the other two ports had to send their grain in barges to Ochakov and Odessa to be loaded into vessels. Now the bars have been dredged away from the mouths of the other two harbors, and there is the keenest of competition between the ports. The total exports are fairly divided between them, but, as once before, Nikolaief gained the lead over the others in the quantity of grain shipped in 1912. The exports of grain from Odessa during the last five years were as follows, in tons of 2,000 pounds:

Grains.	1908	1909	1910	1911	1912
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Wheat	55,883	141,631	457,798	188,967	108,126
Rye	24,840	36,537	135,762	128,528	87,576
Barley	263,089	375,818	442,674	569,293	272,686
Oats	6,730	2,393	538	155	1,867
Maize	380,303	342,192	231,345	763,219	274,491
Total	730,845	898,571	1,268,117	1,650,162	274,746

From January 1 to December 31, 1912, Odessa received from the contributing ports of the Dniester, Dnieper, and Danube Rivers and the Crimean coast 228,186 tons, as against 360,000 tons during the previous year.

The distribution of the export trade between the three principal ports is indicated by the following table for 1911 and 1912:

Grains.	Odessa.		Nikolaief.		Kherson.	
	1911	1912	1911	1912	1911	1912
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Wheat	188,967	108,126	452,424	281,471	429,450	189,999
Rye	128,528	87,576	200,247	86,855	122,920	41,625
Barley	569,295	272,686	838,038	578,098	481,334	270,332
Oats	155	1,867	82,418	83,414	5,915	309
Maize	763,219	274,491	4,635	None.	23,627	3,036
Total	1,650,162	744,746	1,577,762	1,029,838	1,063,246	505,301

SHIPMENTS FROM OTHER PORTS—SHIPPING.

Shipments from other ports in 1912 were as follows: Berdiansk, 180,036 tons; Eupatoria, 84,600 tons; Theodosia, 250,480 tons; Taganrog, 431,300 tons; Ghenichesk, 157,578 tons; Mariupol, 337,770 tons; Rostoff-on-Don, 993,870 tons; and Novorossisk, 936,000 tons, including oil cake. As will be seen from the above, even Rostoff-on-Don exceeded Odessa in quantity of grain shipped. The little port of Horli, which during the past few years has been coming forward as an exporting town, only shipped 41,752 tons, as against 116,110 tons in 1911. On January 1, 1913, there were on hand and ready for loading in warehouses and barges at Odessa 99,000 tons; at Nikolaief, 169,500 tons; and at Horli, 6,000 tons of grain. No statistics are available for Kherson or Skadovsk, but with those two places considered and with what may be waiting at Akkerman and Eupatoria, the probable ready supply of grain waiting in the Russian ports of the Black Sea in May, 1913, was estimated at from 375,000 to 425,000 tons.

The extensive harbor improvements, which for the past three years have been under contemplation, have not as yet been commenced. Shipping concerns reported a bad year for 1912. The number of steamers calling was 722, representing an aggregate tonnage of 1,452,296, as against 977 steamers, representing a tonnage of 1,948,398 in 1911. Russia led with 249 vessels, being followed by Great Britain, Austria-Hungary, Germany, Greece, Netherlands, France, and other countries, in the order given. Owing to political and other conditions, freights were unsteady, as well as high most of the time. Open charter rates to the United Kingdom varied from $2.68 to $6.82 and direct charter from $2.19 to $6.20. Freights to Hamburg ranged from $2.19 to $6.56, while anything going to Mediterranean or Adriatic ports paid from $2.68 to $6.56. Insurance rates on grain cargoes varied as follows: To the United Kingdom, from seven-sixteenths to three-fourths of 1 per cent; to Continental ports, one-half of 1 per cent to 1⅛ per cent; to Mediterranean ports, from 0.37 to 0.75 per cent.

NIKOLAIEF.

The port of Nikolaief is rapidly growing in importance and is second to Odessa—often passing that port—in the matter of exports. The following report upon the year's business of the port was prepared for this consulate by a resident business man of long standing, who is fully conversant with affairs there:

The year 1912 will long be remembered by the trading community of this port as one of the most disastrous in its history. Circumstances were such that the most experienced merchant found his life-long business experience of no assistance to him and he was very nearly as much "at sea" as his junior clerk. The year opened with the legacy of a bad harvest in the previous year and high freights, a bad combination for our export trade, but in spite of this exporters were not inclined to be too pessimistic. Then came the coal strike in the United Kingdom, and our port, in common with others, had to contend with a shrinkage of tonnage and enhanced freights.

Hardly had this unfortunate dispute been settled than trade received a blow the like of which it had not experienced since the Russo-Turkish war. On April 18 the Turkish Government closed the Dardanelles, and they remained closed exactly one month. It is impossible to estimate the damage done to our trade by this, for not only did we lose a full month out of the year, but the West-European consuming markets, being deprived of their usual sources of

supply, were compelled to draw their supplies from other markets. Consequently, when the Dardanelles were reopened our merchants, instead of having a big demand with correspondingly high prices from the west, with which to in some measure recoup their losses, found these markets well stocked, the demand less than usual, and prices below a paying figure. We looked forward to a good business in the autumn, the crop prospects being excellent, but an excessive rainfall in July put large areas under water, rendering harvesting operations impossible and practically destroying the crops. In other districts, although a large proportion of the crops were cut and thrashed, the quality had suffered considerably from the wet. As the crops in many governments were excellent, the harvest on the whole for all Russia was not bad, although in districts serving this port it was very poor, and all hopes of a good autumn campaign were at an end.

In August the political situation in the Balkans assumed a serious aspect, and in September hostilities broke out, and for the next two months our trade labored under a daily expectation of a reclosure of the Dardanelles. Freights rose rapidly, and grain prices, both spot and those offered from abroad, rose and fell so erratically that no one could say how business done in the evening would look in the morning. In view of the political situation the banks curtailed credit considerably, and as the great majority of our exporters work on borrowed capital, trade was still further restricted. The end of the year saw freights down to a more normal level and the political atmosphere much clearer, but grain prices offered by consuming markets were so low and spot prices comparatively high that it was with the greatest difficulty that business could be done.

RIVER, HARBOR, AND TOWN IMPROVEMENTS.

The work of deepening the River Bug to a mean depth of 30 feet made good progress during 1912 and will certainly be completed by the autumn of 1913. In the matter of harbor extension, which work has been in process for two years or more, much was accomplished by the town and the St. Petersburg International Forwarding & Storage Co. In May, 1912, the town council raised a loan of $3,347,500, nominal, in London. The bulk of this money is for various improvements—the city's extension of the existing Government wharf, the purchase of the tramway concession, and the drainage of the city. The plans for the electrification of the tram service and the opening of new routes have already been presented to the authorities at St. Petersburg for confirmation and as soon as approval is received work will be commenced. Meanwhile material is being collected and the city's electric power station is being enlarged. At present the city is devoid of any system of drainage. Each house has its cesspool and rain, after flooding the lower parts of the town, finds its way into the river. The town council has now prepared plans for draining the city and dealing with its sewage and the work is expected to be finished in two years.

SHIPBUILDING AND SHIPPING—EXPORTS AND IMPORTS.

The three dreadnaughts which have been under construction for the Russian Government at this port are being pushed forward as rapidly as possible. A good deal of time has been lost in reconstructing the yards and bringing the workshops up to the requirements of modern warship construction. The work has also been somewhat retarded by the slow delivery of material. Several torpedo boats and destroyers are being constructed here, and the local

works are putting together several submarines. During 1912, 322 steamers called at Nikolaief, representing an aggregate tonnage of 728,444, as against 475 steamers, representing an aggregate tonnage of 1,036,734 during the previous year. By nationality Great Britain led, being followed by Austria-Hungary, Germany, Russia, Greece, Norway, Netherlands, Italy, and Belgium in the order of importance given.

The principal exports from the port of Nikolaief in 1912 were as follows, in tons of 2,000 pounds:

Articles.	Tons.	Articles.	Tons.
Breadstuffs:		Seeds:	
Barley	578,098	Anise	112
Bran	2,496	Colza	247
Buckwheat	16,442	Linseed	2,145
Flour	684	Rape	9,371
Oats	83,414	Sugar	13,209
Rye	86,855	Vegetables:	
Wheat	281,471	Beans	1,534
Briquets	1,800	Lentils	17
Oil cake	10,796	Peas	7,408
Ores:		Wood:	
Iron	387,630	Oak	558
Manganese	37,682	Match	521
Rails	57,636	Other articles	331

All of the manganese ore shipped went to Antwerp. Rails were sent to Vladivostok and sugar and flour to St. Petersburg, while iron ore was divided among the ports of Rotterdam, Middlesboro, Amsterdam, Cardiff, Lubeck, Glasgow, West Hartlepool, and Weser, in the order of importance given.

The principal imports, in short tons, during the year were as follows: Pig iron, 2,700; herrings, 2,180; fire bricks, 1,143; cement, 5,262; sewing machines, 118; various machinery, 1,085; and other articles, 260.

EUPATORIA AND NOVOROSSISK.

Eupatoria, next to Kertch and Theodosia, is the oldest of the now-existing ports in this district. Having insufficient hinterland, the development of its export and import trade is naturally limited, more especially as Eupatoria has no railroad, in which respect it stands alone among the seaports of South Russia. Akkerman, though a larger town, is situated several miles away from the sea and on a shallow river estuary, and its port is supposed to be incapable of any improvement except at a heavy cost. Apart from its rapidly falling export trade in animal products, derived principally from sheep farming, Eupatoria exports, on an average, about 120,000 short tons of grain, and 90,000 tons of lake salt. Most of the grain goes to foreign countries, while the salt is sent principally to Russian Baltic ports and to Russian possessions on the Pacific, where it is used to cure fish. Among the exports of grain, wheat predominates, forming an average of over 75 per cent, and sometimes as high as 90 per cent of the total. Eupatoria wheat is usually very hard and good. About 50 years ago it figured among the best wheats

used for macaroni making, but of late the seed is supposed to have become somewhat mixed. Besides wheat, barley and linseed are exported, and, in good years, the quality of both is rated high. The total grain exported in 1912 amounted to 84,500 tons. The total quantity of salt exported was 59,600 tons. During the year 41 steamships called at the port, 28 carrying away grain and the remainder salt. Eupatoria is a health resort of considerable importance. The bathing there in the sea and salt lakes is excellent, while its mud baths are famous. Formerly good drinking water was scarce, but recently this defect has been remedied by the successful boring of artesian wells, and some splendid gardens and vineyards have sprung up.

RIGA.

[Consul William F. Doty.]

The consular district of Riga is the smallest in European Russia, comprising as it does only the southern half of the Baltic Provinces and the northern part of west Russia, with an area and population as follows:

Divisions.	Square miles.	Population.
Couronia	10,425	741,200
Kovno	15,504	1,775,900
Livonia	17,558	1,455,400
Vilna	16,967	1,926,900
Vitebsk	16,166	1,833,900
Total	76,620	7,733,300

The chief cities of the Riga consular district with their populations and commercial features are as follows:

Towns.	Population.	Industries, etc.
Dvinsk (Duenaberg)	90,000	Railway car shops, tobacco factories, distilleries, breweries, etc.; trade and banking center.
Kovno [1]	76,000	Wire and wire nail works, breweries; some grain trade.
Libau	65,000	Seaport, extensive foreign trade; agricultural machinery, flour, lumber, and other industries.
Mitau [1]	35,000	No large industries.
Polotsk	23,500	Grain, flax, and leather trade.
Riga [1]	283,000	Seaport; milling, brewing, manufacture of machinery, railway cars, and tobacco.
Vilna [1]	168,000	Trade center.
Vitebsk [1]	81,000	Tanning and trade.
Windau	7,000	Seaport.

[1] Provincial capital.

RIGA HANDLES ONE-SIXTH OF RUSSIA'S FOREIGN TRADE.

The value of the combined imports and exports of the port of Riga during 1912 was provisionally estimated by the Chamber of Commerce at $192,018,945, an amount surpassing all previous records and forming nearly one-sixth of the total foreign trade of European

Russia. The increase over the total for 1911 amounts to $19,652,885, of which $18,918,894 represents the increase in exports and $733,991 the gain in imports. A comparison with the trade of the two preceding years shows a steady growth in both exports and imports, the former evidencing the increasing importance of Riga as a port of shipment for Russia's raw products and the latter indicating the expansion of the city's industries. The figures are as follows:

Years.	Exports.	Imports.	Total.
1910	$98,183,179	$73,145,147	$171,328,326
1911	97,279,843	75,086,217	172,366,060
1912	116,198,737	75,820,208	192,018,945

The growth in the value of Riga's exports in 1912 is particularly noteworthy, in view of the decrease in the exports from the entire country, and is attributed to the following increases in four staple articles: Flax and tow, $10,457,442; hides and skins, $8,797,745; mineral oils, $834,000; and lumber, $796,447. The exports of lumber decreased in quantity but increased in value. The principal decreases were: Grain, $2,341,190; linseed, $149,955, in spite of an increase in quantity; oil cake, $270,950; eggs, $361,166; butter, $288,188; game, $362,055.

EXPORTS IN DETAIL.

The quantities of the principal export items shipped from Riga in 1911 and 1912 are shown by the following table (in tons of 2,240 pounds):

Articles.	1911	1912	Articles.	1911	1912
	Tons.	*Tons.*		*Tons.*	*Tons.*
Bran	3,923	4,127	Hemp and tow	19,327	22,374
Butter	4,729	3,624	Hides and skins:		
Eggs	80,623	80,070	Calf, goat, and sheep	14,874	19,786
Flax and tow	92,403	145,322	Cattle and horse	2,589	12,312
Furs	212	228	Linseed	52,210	58,880
Game	10,317	7,618	Mineral oils	12,479	28,044
Grain:			Oil cake	52,389	45,866
Barley	29,121	20,969	Petroleum	332	1,975
Beans	189	264	Pork and bacon	3,679	3,268
Buckwheat	1,260	3,222	Rags	1,369	1,601
Oats	12,430	11,652	Rubber goods:		
Peas	665	798	Shoes	277	402
Rye	1,946	32,663	Waste	1,083	1,190
Vetches	3,763	1,814	Other	653	788
Wheat	176,015	63,669	Lumber	[1] 99,200,000	[1] 960,00,000

[1] Cubic feet.

The estimated values of some of the leading items of export and import in 1912 are given in the following table, in comparison with the final corrected values for 1911:

Articles.	Corrected values, 1911.	Estimated values, 1912.	Articles.	Corrected values, 1911.	Estimated values, 1912.
EXPORTS.			IMPORTS.		
Butter	$2,348,188	$2,060,000	Coal and coke	$3,282,854	$5,643,885
Eggs	16,524,441	16,163,275	Copra	1,497,993	1,802,500
Flax and tow	15,960,107	26,417,549	Cotton	5,322,600	3,605,000
Game	2,313,905	1,951,850	Dyewoods	441,240	949,725
Grain	6,945,290	4,604,100	Herrings	1,710,779	2,446,250
Hemp	2,974,728	3,347,500	Hides and skins	2,339,580	1,802,500
Hides and skin	15,450,000	24,247,745	Lard	1,077,172	960,475
Linseed	3,774,525	3,624,570	Lead	861,832	944,479
Lumber	19,589,313	20,385,760	Machinery:		
Mineral oils	538,690	1,372,990	Agricultural	1,349,393	3,090,000
Oil cake	1,985,900	1,714,950	Industrial	8,453,811	7,081,250
			Parts	2,355,909	2,575
			Quebracho	827,074	388,663
			Resin	640,870	913,959
			Tea	4,549,293	2,060,000

GRAIN, FLAX, AND HEMP TRADES.

The grain trade in 1912 was unsatisfactory to dealers, who believed that the favorable official crop reports justified the expectation of large quantities of grain from the 1912 crop to offset the small exports in the early part of the year, which resulted from the poor harvest of 1911. Their expectations were not realized, as offers of the new crop continued remarkably few until the end of the year, at prices much above those prevailing on the world market. The dearth of grain is attributed to the inferior quality of the grain that resulted from inclement summer weather, which left only a small proportion of the crop available for export. The greatest decrease occurred in the exports of wheat, which were 112,000 tons below those of 1911.

The year was highly satisfactory to flax growers. The high prices of 1911 had led to an increase in the acreage devoted to flax estimated at 15 per cent, and a good yield of fiber was obtained. Exporters, however, had to contend with a continuous rise in prices, which in many cases subjected them to losses in covering sales. In Livonia flax rose from $162 per ton at the opening of the season to about $184 in April, but in spite of the high prices the exports of flax exceeded those of 1911 by 52,919 tons.

Prices of flaxseed and of the oil and oil cake were likewise high at the beginning of the year, the average price of 87½ per cent pure flaxseed being 3 cents per pound. At the prevailing prices for raw material, however, the domestic manufacturers did not find production remunerative and by restricting purchases compelled dealers to dispose of their holdings in foreign markets at considerable loss.

The Russian hemp crop of 1912, although in quantity below the average, was superior in quality to that of the preceding year. The trade was characterized by a decided firmness in all hemp markets, and by a good demand for the fiber from foreign and domestic manufacturers. The high prices which ruled during the early part of the

season were due to the absence of old stocks and to the severe weather during the winter months, which caused impassable roads and prevented the arrival of supplies. Later in the season, on the crop shortage becoming more apparent, a stronger demand set in, which continued to the end of the year and caused a further advance in prices.

The average price of raw Polish hemp rose from $136 per ton at the beginning of the year to $142 at its close. Clean Polish hemp rose from an average of $179 per ton to an average of $185; raw Russian hemp from an average of $134 per ton to an average of $142, and clean Russian hemp from an average of $166 per ton to an average of $174.

HEAVY EXPORTS OF HIDES AND SKINS.

The exports of hides and skins in 1912 were greater than in any previous year. Crop failures in 1911 in many parts of Russia caused farmers to slaughter a large number of cattle and horses which would ordinarily have been kept for use or for breeding. The lack of fodder also caused many animals to starve, so that the number of cattle and horses has been much reduced and the production of hides and skins will necessarily be reduced for a few years. The quantity of hides available for export was also increased in 1912 by the critical condition of the Russian tanning and finished-leather industries, in both of which many failures were reported. This condition has now passed and the industries have taken on new life as a result of the large orders given by the Russian Government on account of the Balkan war.

In spite of the large supplies offered, prices for raw hides and skins started in the spring of 1912 at the same level that prevailed during the fall of 1911. Prices of horse hides and colt, calf, and sheep skins rose steadily, while cow hides and goat skins remained firm. There was a particularly good demand from America for light cow hides. Russia annually produces about 8,000,000 calf skins, and 4,000,000 goat skins, all of which are exported; 5,000,000 lamb and sheep skins, of which three-fourths are exported; 1,500,000 horse hides and colt skins, of which half are exported; and 1,500,000 cow hides, half of which are exported.

HIGH PRICES FOR LUMBER.

All lumber goods showed great rises in prices in 1912, which were further accentuated by increased freight rates. The quantity of timber obtained from the forests during the winter of 1911–12 was about one-third below normal, on account of the unusually short duration of the sledge roads on which logging depends. It is believed that the present high level of lumber prices will continue, as those forests lying near navigable streams or railroads have of late years been much depleted and the exploitation of such as lie farther from lines of communication, and upon which the trade now depends for a large part of its supplies, is very costly. The cost of labor has also increased greatly in the last seven years.

EXPORTS TO THE UNITED STATES.

The value of the exports to the United States declared at the Riga consulate and the consular agency at Libau during 1911 and 1912 is shown by the following table:

Articles.	1911	1912
RIGA.		
Books	$22,811	$31,143
Bristles	6,884	3,074
Buckthorn bark	6,180	1,355
Butter	.....	10,276
Cantharides	1,205	.....
Church articles	1,587	477
Ergot of rye	1,746	6,103
Flax and tow	106,502	211,235
Furs:		
Fox	1,816	1,911
Hare	37,433	28,185
Other	684	1,108
Fusel oil	11,709	.....
Glue stock	40,768	7,752
Hair, animal	21,966	42,466
Hemp and tow	30,246	134,313
Hides and skins:		
Badger	691	9,630
Calf	6,337,544	10,590,718
Colt	566,919	418,799
Cow	172,908	3,095,215
Dog	.....	4,283
Goat	671,821	1,351,945
Horse	712,485	1,156,338
Sheep	741,540	1,342,983
Horse manes	.....	7,196
Linseed	.....	1,004
Liquors	10,493	10,933
Oils, mineral	30,271	88,479
Rennets	1,447	2,345
Rubber:		
Reclaimed	9,438	262
Tires	35,289	20,977
Waste	10,566	40,158
Seeds:		
Anise	.....	1,410
Coriander	1,754	958
Splints	1,090	.....
Wood pulp	153,328	68,421
Wool	16,032	110,606
All other articles	1,443	3,323
Total	9,766,596	18,805,381
LIBAU.		
Bristles	3,263	1,296
Confectionery	1,894	1,431
Cork shavings	6,228	4,435
Crash	3,277	718
Ergot	3,471	809
Fish	7,927	11,291
Flax	32,606	32,224
LIBAU—continued.		
Furs:		
Fox	$2,658	$3,663
Hare	34,312	87,426
Lamb	10,201	.....
Marmot	8,575	.....
Other	2,204	206
Fusel oil	338,015	320,832
Glue stock	14,961	16,976
Hair:		
Camel	232,697	36,116
Cattle	7,058	4,211
Deer	11,210	.....
Elk	2,415	.....
Goat	12,164	.....
Horse	49,229	3,394
Hemp	75,553	31,557
Hides:		
Calf	116,797	546,722
Cattle	3,518	306,183
Goat	72,085	127,804
Horse	189,076	39,753
Sheep	71,611	27,799
Household goods	.....	4,104
Liquors	808	4,069
Lycopodium	1,381	.....
Matches	2,674	2,214
Mushrooms	61,219	51,525
Nuts	5,449	900
Pulses:		
Beans	2,744	1,746
Peas	14,716	47,223
Rubber waste	6,611	16,447
Rye	3,625	.....
Seeds:		
Anise	.....	6,601
Caraway	.....	1,310
Clover	.....	8,628
Coriander	.....	2,189
Lucerne	10,709	.....
Millet	14,981	6,111
Mustard	3,417	15,850
Poppy	318	2,086
Vetches	10,467	31,514
Other	4,440	146
Tobacco	1,129	1,826
Tow	3,768	10,386
Turpentine	18,013	21,109
Wool	323,982	233,500
All other articles	10,308	9,759
Total	1,813,764	2,084,089

The American goods returned to the United States from Riga in 1912 were valued at $559, and from Libau, at $390.

IMPORTS INTO THE PORT OF RIGA.

The principal raw material imported into Riga is crude rubber, the imports of which in 1912 were valued at $8,275,169. The greater part of this rubber is used locally in the manufacture of rubber shoes, tires, etc., there being three establishments engaged in that trade in Riga. The largest of these rubber factories was founded in 1888 and now has a yearly output valued at nearly $10,815,000. The rubber industry is next to the largest in Riga, being exceeded only by the manufacture of railway cars.

The imports of coal increased 162,365 tons over those of 1911, in spite of higher prices. The total value for the year was $2,361,031, the largest yet recorded at this port. Although a large quantity of coal was imported for the State Railways, which were unable to obtain their full supply from the mines of South Russia on account of the large home industrial demand, most of the coal imported went to the factories of Riga, which are entirely dependent upon foreign countries for their fuel supplies. Coal prices were subject to considerable fluctuations during 1912, rising from $5.30, the wholesale price at the opening of the year, to $15.25 per ton during the British coal miners' strike. The price at the close of the year was $11.20 per ton.

Owing to the increased consumption of Central Asian cotton by the textile mills of interior Russia, the imports of American cotton declined from 10,740 tons in 1911 to 7,757 tons in 1912. The total value in the latter year was $3,605,000, or $1,717,000 below that of the previous year. The consumption of cotton by the Riga mills, which use only the American article, was normal, the decrease occurring in the transit shipments, which make up the greater part of the imports.

Large quantities of copra are used by the oil mills of Riga, the imports in 1912 showing an increase of 2,144 tons, valued at $304,507. There are four large oil mills in Riga, which use chiefly linseed and copra. The oil is retained for local consumption or sold to the interior Provinces, and most of the oil cake is exported to foreign countries.

The hides imported at Riga are chiefly heavy bull and buffalo from South America and other southern regions suitable for sole leather—a quality of hide which Russia does not produce. The imports fell off by 1,844 tons and $537,080 in value as compared with 1911. The decline is attributed to the depression in the tanning industry during 1912.

Fertilizers are imported in large and increasing quantities at Riga, the total for 1912 being 128,932 tons, as compared with an annual average of 44,683 from 1901 to 1905. They are consumed principally in the Baltic Provinces, although the farmers of Lithuania are more and more becoming purchasers of lime superphosphates. The wholesale prices of fertilizers:

Fertilizers.	Price per 216-pound bag.	Fertilizers.	Price per 216-pound bag.
Superphosphate, with phosphoric acid content of—		Potash salts, with potash content of—	
13 to 14 per cent	$1.42	30 per cent	$2.06
16 to 18 per cent	1.65	40 per cent	2.68
18 to 20 per cent	1.80	Kainit	.93
20 to 22 per cent	1.95	Bone meal	2.19
Basic slag, with phosphoric acid content of—		Nitrate of soda	a .95
17 per cent	1.16	Raw phosphate	a .62
20 per cent	1.31		

a Per 36-pound sack

Potash salts, kainit, nitrate of soda, and superphosphates are imported from Germany and basic slag from Great Britain and Bel-

gium. The fertilizers containing potash are used mainly to improve grass lands, and are being bought in increasing quantities.

The imports of lead amounted to 7,357 tons, valued at $944,479, a decrease of 1,400 tons in quantity below the previous year, but an increase of $82,647 in value. There is only one establishment here—a white-lead factory—which uses this metal to any extent as a raw material. Most of the imports are destined for the interior Provinces.

Considerable quantities of wrought iron and steel are used in Riga. Most of these articles are supplied by the works of interior Russia and Russian Poland, which supplied 57,366 tons in 1911 and 55,741 tons in 1912, as compared with 12,398 tons imported from foreign countries in 1911 and 11,027 tons in 1912. Imports of cast iron were unimportant up to 1911, but in that year they rose to 3,510 tons and in 1912 to 5,226 tons, on account of a temporary reduction of the duty authorized until January 1, 1913, to relieve the pig-iron famine in the western Provinces. In addition to this foreign pig iron, the local mills consume large quantities of South Russian pig, the amount for 1911 being 69,444 tons.

Owing to the flourishing condition of the Russian chemical industry, there was a large demand during 1912 for sulphur and pyrites and a corresponding increase in these imports amounting to 1,043 tons and 4,505 tons, respectively. Sicily furnishes the greater part of these supplies.

There are two jute mills in Riga, but they are not able to consume all the fiber imported, and a large part of the importation goes to the interior Provinces. The imports in 1912 were 262 tons below those of 1911.

The latest statistics of imports of manufactured articles into Riga are those for 1911, in which year Great Britain supplied $9,517,137; Germany, $6,959,922; Sweden, $2,182,763; the United States, $383,300; Denmark, $374,045; and Belgium, $330,479, out of a total of $19,779,070. Great Britain supplied more than two-thirds ($7,402,014) of the imports of industrial machinery, which aggregated $10,809,108. Out of a total of $1,349,392 worth of agricultural machinery imported, Sweden supplied $519,265 worth; the United States, $382,987; Great Britain, $234,463; and Germany, $203,667.

Of the manufactured articles other than machinery, aggregating $7,620,570 in 1911, Germany supplied $5,039,706; Great Britain, $1,880,660; Sweden, $424,618; Belgium, $123,502; Denmark, $120,347; the Netherlands, $29,978; France, $1,446; and the United States, $313.

The values credited to the United States in Russian import statistics, however, represent only direct shipments, as goods transshipped in European countries are credited to those countries. An approximate estimate of the American manufactured goods imported at this port, exclusive of agricultural machinery, in 1911, gives a total of $189,000, divided as follows: Cash registers and calculating machines, $67,500; hardware, $60,000; firearms, $3,500; office furniture, $5,500; shoes, $16,000; scales, $7,000; typewriters, $29,500. Some American firms have opened branches and sample rooms in this city and imports from the United States may be expected to show considerable increases in the future. Most of the lard imported at Riga is American compound, bought chiefly through Hamburg, only about 10 per cent of the imports being high-grade American and Dutch pure lard.

A comparison of the imports in 1911 and 1912, in tons of 2,240 pounds, is given by the following table:

Articles.	1911	1912	Articles.	1911	1912
	Tons.	*Tons.*		*Tons.*	*Tons.*
Chalk	87,487	131,784	Lard	4,573	3,762
Citrus fruits	7,696	5,375	Lead	8,757	7,357
Clay and potter's earth	35,336	40,129	Leather	406	343
Coal and coke	656,117	818,482	Machinery:		
Coffee	809	886	Agricultural	6,428	16,192
Copper	134	277	Industrial	19,229	15,132
Copra	11,264	13,408	Parts of	7,255	8,045
Corkwood	6,118	7,802	Rice	4,393	8,016
Cotton, raw	10,740	7,757	Resin	5,715	7,622
Dyewoods	10,595	203,871	Rubber	3,198	3,689
Electrical supplies	347	615	Steel	5,559	5,528
Fertilizers	97,276	128,931	Sulphur	3,538	4,581
Fire bricks	11,212	13,585	Sulphur pyrites	21,166	25,671
Herrings	25,978	34,412	Tanning woods	7,147	7,581
Hides and skins	8,726	6,882	Tea	2,011	949
Iron:			Tin	1,128	1,068
Wrought	6,839	5,499	Wool	2,041	22,408
Cast	3,510	5,226	Zinc	1,689	1,825
Jute	8,195	7,933			

LIBAU.

[Consular Agent Alfred Seligmann.]

The quantities and values of the principal articles exported from and imported into Libau during 1911 and 1912 are shown by the following table:

Articles.	1911		1912	
	Quantity.	Value.	Quantity.	Value.
EXPORTS.				
Animals: Horses ..... heads	7,869	$314,760	6,748	$269,920
Bran ..... tons	1,198	29,411	3,866	99,572
Cereals:				
Barley ..... do	2,694	76,781	15,237	457,127
Beans ..... do	86	2,426	225	7,304
Buckwheat ..... do	5,985	157,996	10,743	306,186
Lentils ..... do	242	7,256	25	930
Oats ..... do	432,089	11,559,033	324,000	9,615,922
Peas ..... do	23,839	714,315	17,841	546,043
Rye ..... do	7,748	213,843	5,292	158,775
Wheat ..... do	2,209	70,243	574	20,663
Cork shavings ..... do	1,509	22,635	328	5,406
Eggs ..... do	1,406	295,302	1,526	343,312
Flax ..... do	353	52,905	276	41,438
Flour ..... do	394	15,118	823	44,564
Fusel oil ..... do	598	280,284	434	208,872
Glue stock ..... do	1,413	50,853	1,047	47,134
Hair:				
Camel ..... do	1,178	424,152	1,589	572,076
Horse ..... do	321	192,740	156	49,739
Iron slag ..... do	2,735	3,282	3,861	4,634
Linen ware ..... do	49	21,975	27	12,113
Matches ..... do	66	5,934	49	4,809
Meat ..... do	3,735	840,314	4,374	984,278
Oakum ..... do	152	25,128	407	40,227
Oil cake:				
Cocoa ..... do	3,224	186,729	4,696	140,886
Hemp ..... do	24,801	483,618	24,288	582,913
Linseed ..... do	1,286	52,094	2,034	79,314
Oil ..... do	7,680	161,291	4,006	60,089
Sunflower ..... do	11,299	305,071	24,831	744,912
Printed matter ..... do	80	48,100	85	63,913
Rubber shoes, old ..... do	294	44,137	146	26,259
Seeds:				
Hemp ..... do	1,060	50,249	1,696	68,657
Linseed ..... do	13,032	879,855	23,479	1,268,049
Other ..... do	4,798	254,698	6,415	528,333
Skins and hides ..... do	9,571	6,026,984	15,945	10,405,584
Tar ..... do	6,199	148,767	5,868	140,817
Timber:				
Various ..... cubic feet	10,874,744	1,558,145	11,036,633	1,629,022
Staves ..... thousands	783	704,331	705	707,575
Sleepers ..... cubic feet	1,819,734	235,829	1,275,238	181,379
Other ..... tons	10,755	390,768	15,219	690,387

Articles.	1911		1912	
	Quantity.	Value.	Quantity.	Value.
EXPORTS—continued.				
Turpentine....tons..	3,154	$312,245	1,690	$152,100
Wool....do....	2,986	895,770	2,627	1,182,158
All other articles....do....	15,561	2,607,709	191,872	3,545,449
Total....	....	30,723,076	....	36,041,740
IMPORTS.				
Castor-oil seed....tons..	7,041	177,374	4,763	130,496
Cereals:				
Barley....do....	4	132	21	440
Oats....do....	45	1,316	26	624
Rye....do....	9,169	234,787	2,621	54,497
Wheat....do....	3,281	76,783	29	775
Chemical manure (superphosphate) and slag....do....	60,846	622,858	90,511	985,249
Coal....do....	133,211	403,450	171,367	635,437
Copra....do....	15,828	259,926	14,970	268,267
Corkwood....do....	5,636	301,184	4,958	297,709
Cotton....do....	329	96,530	471	135,010
Fluid oil....do....	1,023	113,266	1,322	155,613
Grinding stones....do....	474	17,197	609	20,517
Herrings....do....	87,510	2,816,856	87,172	2,721,463
Lard and tallow....do....	499	58,385	482	37,197
Mechanical tools....do....	336	108,124	363	118,889
Mineral colors....do....	182	7,960	231	12,968
Miscellaneous machinery....do....	18,801	5,080,752	16,376	4,860,193
Seeds....do....	3,289	94,299	4,078	154,052
Tanning material....do....	8,460	232,977	6,281	161,988
All other articles....do....	84,076	5,252,148	105,871	5,334,233
Total....	440,040	15,956,304	512,522	16,085,617

According to the official statistics for the port, Libau's trade with the United States in 1911 and 1912 was as shown by the following table:

Articles.	1911		1912	
	Tons.	Value.	Tons.	Value.
EXPORTS TO THE UNITED STATES.				
Cork shavings....	268	$4,028	204	$3,378
Flax....	271	40,740	245	36,702
Fusel oil....	896	259,315	405	175,194
Glue stock....	1,113	40,077	536	24,119
Hair:				
Camel....	782	281,376	1,351	486,564
Horse....	287	171,970	25	7,861
Hides....	8,795	5,538,569	14,918	9,739,379
Linen ware....	49	21,975	27	1,208
Matches....	39	3,483	88	3,717
Oakum....	82	11,209	78	7,728
Printed matter....	70	41,860	69	51,400
Rubber shoes....	293	43,972	145	26,094
Seeds....	118	7,403	291	17,172
Turpentine....	6	579	237	21,355
Wool....	2,871	861,375	2,338	1,052,272
All other articles....	3,519	698,114	2,574	768,200
Total....	19,459	8,026,045	23,481	12,422,343
IMPORTS FROM THE UNITED STATES.				
Cotton....	329	96,516	471	134,995
Fluid oil....	1,003	111,074	1,316	154,915
Grinding stones....	190	6,409	77	2,468
Lard and tallow....	6	749	91	6,961
Mechanical tools....	....	....	83	24,724
Mineral colors....	63	2,753	31	1,733
Miscellaneous machinery....	11,550	3,121,273	8,619	2,557,958
Seeds....	2	56	13	481
Tanning material....	10,550	455,739	....	....
All other articles....	4,282	490,317	19,700	1,042,431
Total....	27,975	4,284,886	30,401	3,926,666

No new factories of any importance were started in Libau in 1912 and there were no important strikes. The wages of unskilled labor ranged from $0.65 to $0.90 per day. There were no noteworthy failures during the year. The discount rate for the year was 6 to 8 per cent.

The Russian East-Asiatic Steamship Co. continued its regular fortnightly service between Libau and New York, with four steamers, carrying 32,395 emigrants, as compared with 19,351 in 1911. The company has erected a large building in Libau for housing emigrants, with 52 rooms, providing sleeping accommodations for about 800 persons.

There is also a regular weekly steamship service to London, which carried 5,390 emigrants in 1912, as against 2,853 in 1911, and a line to Hull, which carried 20,312 emigrants in 1912, as compared with 13,354 in 1911.

The entries and clearances at the port of Libau are shown by the following table:

Nationality	Entries.				Clearances.			
	1911		1912		1911		1912	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Russian	532	362,305	548	372,205	536	363,401	563	372,845
Danish	316	183,418	310	171,707	318	186,013	305	171,045
German	358	174,671	355	190,504	350	169,600	360	193,698
Swedish	258	109,555	193	78,400	260	111,599	190	76,123
Norwegian	141	74,818	128	69,977	140	74,325	130	69,533
English	81	63,685	76	66,495	80	62,645	77	67,489
Belgian	3	2,317	.....	.....	3	2,317	.....	.....
Dutch	11	2,046	6	3,820	12	2,129	5	3,019
Italian	1	934	1	985	1	934	1	985
Total	1,701	973,749	1,617	954,093	1,700	972,963	1,631	954,737

WINDAU.

[Consul William F. Doty, Riga.]

The city of Windau, at the mouth of the Windau River, has a population of about 15,000, and one of the best harbors on the Russian coast of the Baltic Sea. Since the completion of the Moscow-Windau Railway, which connects the port with central Russia, its foreign trade has greatly increased. Further development is expected when the proposed dock and harbor extensions are completed. As a shipping port in the Russian Baltic trade, Windau ranks next to St. Petersburg and Riga. The growth of the trade of the port is indicated by the following statistics:

Years.	Exports.	Imports.	Total.
1910	$35,992,371	$7,394,160	$43,386,531
1911	42,319,412	12,562,957	54,882,369
1912	48,796,908	14,474,021	63,270,929

The articles entering into the export trade were:

Articles.	1911		1912	
	Tons.	Value	Tons.	Value.
Dairy products	53,641	$25,834,722	49,446	$23,763,372
Drugs	305	69,602	61	19,544
Food products	4,398	501,192	5,393	382,677
Grain	197,227	6,294,365	178,676	6,281,406
Lumber	298,015	2,690,535	293,748	2,901,427
Manufactures	2,039	258,965	2,374	457,529
Meats, game, and poultry	3,634	739,239	4,584	917,462
Metals	3	348	12	584
Raw products	56,829	5,411,732	82,335	12,888,963
Seeds	6,000	490,061	15,882	1,144,442
All other articles	78	28,651	293	39,502
Total	622,169	42,319,412	632,804	48,796,908

The exports to the United States included in this table were as follows: Hides and skins, 118 tons, $27,307; camel hair, 180 tons, $40,384; sheep's wool, 198 tons, $62,809; food products, 9 tons, $6,126; machinery and parts, 3 tons, $5,129—a total of $141,755.

The principal imports into Windau are shown by the following table:

Articles.	1911		1912	
	Tons.	Value.	Tons.	Value.
Building materials and fuel	21,034	$106,308	20,708	$76,673
Drugs	300	42,335	1,659	88,338
Dyes and dyewoods	4,771	90,917	.....	.....
Electrical apparatus	2	5,890	6	7,295
Fibers	412	191,667	1,472	474,051
Food products	4,036	481,315	5,734	389,348
Machinery	45,526	9,939,734	40,008	10,547,498
Metals	540	106,365	1,500	234,953
Metal manufactures	7,254	310,782	20,368	819,692
Minerals	160	2,840	256	12,355
Textiles	2,915	872,978	2,647	857,595
All other articles	5,747	411,826	8,516	966,223
Total	92,697	12,562,957	102,874	14,474,021

The imports into Windau from the United States in 1912 were some $4,500,000 less than those of 1911, owing to the importation during the latter year of agricultural machinery and twine by the International Harvester Co. largely in excess of its requirements for the year, in anticipation of possible Russian tariff changes. The imports from the United States in 1911 and 1912 were as follows:

Articles.	1911		1912	
	Tons.	Value.	Tons.	Value.
Automobiles	.....	$26,780	.....	$8,240
Chains	5	1,388	.....	.....
Cotton, raw	64	10,534	.....	.....
Dyewoods	5,985	67,516	.....	.....
Fuels	24	1,802	.....	.....
Iron, pig	189	19,364	44	4,455
Ironware	235	37,493	53	10,695
Leather goods	4	2,575	2	14,997
Linen goods	.....	.....	3	1,030
Machinery:				
Agricultural	40,081	8,234,569	17,907	4,289,803
Industrial	301	110,983	712	231,028
Parts	677	231,383	450	132,636
Other	217	81,906	100	31,538
Metals	.....	.....	51	4,728
Steel rails	.....	.....	22	1,545
Steelware	.....	.....	5	1,545
Tinware	5	1,428	18	3,977
Tools	40	8,735	22	5,316
Tubing	.....	.....	1	155
Twine	2,749	791,468	1,098	381,345
Whetstones	11	2,784	.....	.....
Wire goods	8	1,808	7	1,982
All other articles	22	2,876	20	3,544
Total value	.....	9,635,392	.....	5,128,559

The vessel entries at the port of Windau during 1912 numbered 833, aggregating 611,621 registered tons, as compared with 809, of 595,559 registered tons in the preceding year.

ST. PETERSBURG.

[Consul Jacob E. Conner.]

In the St. Petersburg consular district are included the Grand Duchy of Finland and the northern half of European Russia, from the Baltic Sea to the Siberian frontier and from the northern boundary of the Moscow consular district to the Arctic Ocean. The area and population of the eight Finnish Läns and the Russian Governments included within this district are as follows:

Divisions.	Square miles.	Population.	Divisions.	Square miles.	Population.
Archangel	325,760	437,800	Pskov	16,663	1,354,800
Esthonia	7,597	467,400	St. Petersburg	17,210	2,882,900
Finland, 8 Läns	125,572	3,030,400	Viatka	59,274	3,747,000
Kostroma	32,402	1,700,900	Vologda	155,120	1,625,200
Novgorod	45,728	1,638,500			
Olonetz	49,309	443,400	Total	962,019	21,059,500
Perm	127,384	3,731,200			

The following table shows the population of each of the principal cities of the St. Petersburg consular district, together with its chief commercial features:

Towns.	Population.	Industries, etc.
Abo, Finland	47,000	Seaport; manufacturing and shipbuilding. Some trade with Sweden and southern Europe.
Archangel	21,000	Seaport; shipyards and ropewalks.
Baltic Port	1,000	Seaport; terminus of Baltic Railway.
Cronstadt	60,000	Seaport; military port; shipyards, dry docks, etc.
Ekaterinburg	43,000	Center of Ural mining district, metallugical works; polishing and cutting semiprecious stones; trade center.
Helsingfors, Finland	137,000	Seaport; educational center.
Irbit	11,000	Seat of great annual fur fair.
Kostroma[1]	43,000	Textiles.
Kuopio,[1] Finland	15,500	Butter and wood trade; shipping.
Narva	19,000	Textile mills, fishing, and trade.
Nikolaistad, Finland	19,000	Seaport.
Perm[1]	47,000	Trade center.
Petrosavodsk	14,000	Government ordnance factory.
Pskov[1]	31,000	Trade in flax.
Reval[1]	69,000	Naval station, summer resort.
Tammerfors, Finland	44,000	Textile, paper, and iron works.
Tsarkoe Selo	20,000	Pleasure resort.
Uleaborg, Finland	19,000	Seaport; leather goods; trade in woodenware, tar, and pitch.
Viatka[1]	34,000	Trade center.
Viborg, Finland	24,000	Seaport; exports lumber, dairy produce, and paper.
Vologda[1]	29,000	Some trade.

[1] Provincial capital.

FAIR AMERICAN TRADE.

The year 1912 was not poor for American commerce in this district in spite of certain most unfavorable circumstances. Government orders for American goods declined noticeably, especially in the large orders for Government automobiles and trucks, which went almost exclusively to other countries. Private orders, however, showed little change for the worse, and several new lines of activity were noted. For two years this office has answered inquiries and written reports upon the opportunity for the establishment of an American shoe store in St. Petersburg, and during 1912 one was opened here. The popularity of this store has exceeded all precedent in the local shoe trade.

The machine-tool trade was active throughout the year, especially in the larger articles and those necessary for the installation and equipment of manufacturing plants. American firms have been called on for bids involving several million dollars worth of equipment.

By keeping a representative here for a few months, one who is able to make estimates or at least to act as a thoroughly creditable intermediary, an American firm would be in a position to pick up a great deal of business. The president and vice president of a large American manufacturing firm happened to be in this city recently and sold an entire new plant equipment for a paper factory. A large German machine-tool firm opened up an establishment during 1912, in a central part of this city, handling American-made goods almost exclusively. It reports a very satisfactory trade. Private sales of automobiles were active during the year and at least three American firms have secured representation. The commercial correspondence

of this office shows an interest in this country on the part of the American public, which is noticeably more alert and more intelligent than that of three years ago, and many firms have been assisted to secure representation.

NEED OF DIRECT REPRESENTATIVES.

It still remains true, however, that the finding of suitable agents is one of the great obstacles to the promotion of American trade here. Most of our goods are in the hands of people from competing nations; sometimes in the hands of those representing competing goods. Often the price is enhanced to the consumer by two or three profits added to it en route from America to Russia, as a result of the custom of treating Russian trade indirectly and not dealing directly; of dealing through Hamburg, London, and Copenhagen instead of getting first-hand information. By direct dealing it would be possible not only to cut out intermediate profits but sometimes even prohibitive prices, and to prevent American goods appearing on this market as German, English, Danish, etc. More than all, perhaps, it would thus be more likely that the American business public would learn how to meet the needs and peculiarities of this market, and how to extend its own influence. Treating this region as a territorial adjunct to western Europe was the best that could be done at an earlier period; but the importance of the Russian market has long ago passed that stage, and it must receive more extended consideration from both sides if Russian-American business relations in this section are to attain what is normally possible.

BUILDING OPERATIONS—TELEPHONES.

The building activity in this city during 1912 was probably the greatest since Peter the Great's time. The short summer season when it is possible to carry on such work unhampered by the elements makes that season especially crowded; and the same conditions affect street improvement. As a result the city is in much disorder during the summer. During the year the population passed the 2,000,000 mark, showing a remarkable rate of growth. Escape from the center of the city by rapid transit is still impossible, except by the railway trains running at intervals of about one hour on each road. As might be expected, therefore, rents in the central part of the city are rising to high figures. These facts are noteworthy for those interested in building material, city transportation, etc.

The number of telephone subscribers in this city January 1, 1913, was 43,750 and there was collected in subscription therefor in 1912 the sum of $1,344,247.

IMPORT TRADE.

The total imports for the consular district of St. Petersburg, exclusive of Finland, show an increase over the figures for the preceding year of nearly 5 per cent, the figures being given in weight, not value. The ports for which official data are obtainable are St. Petersburg, Reval, Cronstadt, Archangel, and Narva. The imports

for 1911 were 2,880,152 short tons, and for 1912 3,023,694 short tons, a gain of 143,542 tons divided as follows:

Port of entry.	1911	1912
	Short tons.	*Short tons.*
St. Petersburg	2,323,782	2,441,248
Reval	431,236	368,496
Cronstadt	77,634	162,920
Archangel	33,784	39,924
Narva	13,716	11,106

The imports credited to Cronstadt and Archangel consisted only of coal and coke and at Narva of cotton, indicating that the returns are far from complete.

The imports, by commodities, for the port of St. Petersburg are given as follows:

Articles.	1911	1912	Articles.	1911	1912
	Short tons.	*Short tons.*		*Short tons.*	*Short tons.*
Tea	630	1,332	Copper	2,274	4,248
Herrings	84,242	73,112	Zinc	4,896	5,202
Coal	2,016,702	2,134,638	Machinery	22,374	18,324
Coke	130,554	129,978	Parts of machinery	2,934	3,042
Pig iron	17,676	11,862	Pulp	8,514	10,632
Manganese iron	5,850	9,324	Cellulose	342	414
Sheet iron	8,298	7,344	Cotton	29,736	26,550
Steel	2,556	2,088	Wool	3,204	3,158

Of the above imports, only cotton, machinery, and parts of machinery figure largely in American trade. These all, with a slight exception in favor of the last named, show a considerable decrease. There are no published statistics to show the amounts or the percentages of the above figures for American imports.

The largest item in value among the imports accredited to both Germany and Great Britain is "machinery and apparatus of cast iron, wrought iron, and steel." Germany is credited under this caption with $28,433,663 in 1911 and $29,018,705 in 1912, while the corresponding figures for Great Britain are respectively $7,768,775 and $5,289,565. The figures for Germany, judging from the fact that the largest dealers here handle American machine tools principally and their sales are chiefly to the Government, represent in large part, possibly more than half, American-made goods. What gives added probability to this conclusion is that the German goods chiefly sell on their cheapness and American goods on their excellence, and the Government, as a purchaser, can afford to ignore the difference in cost. The above figures are for all of Russia, but the large purchases by the Government make them of especial significance to this district. In spite of the decrease in total imports from the United States and the decreased direct purchases by the Russian Government already noted, the evidence at hand leads to the belief that imports from the United States kept up remarkably well at this port during 1912.

EXPORTS TO THE UNITED STATES.

In the increased Russian export trade to the United States in 1912, as compared with the preceding year, St. Petersburg had a large share. The exports declared at this consulate for shipment

to the United States had a total value of $1,368,180, as compared with $1,090,750 in 1911, and these figures do not include the shipments from Finland or from other parts of this district. The value of the principle articles declared during 1911 and 1912 is shown by the fallowing table:

Articles.	1911	1912	Articles.	1911	1912
Alcoholic products	$17,401	$18,402	Hides and skins:		
Books	2,808	3,357	Calf	214,789	407,137
Bristles	11,143	44,587	Colt	85,009	2,374
Casings, sheep	.....	2,356	Cow	.....	46,274
Caviar	4,930	1,074	Goat	94,113	35,879
Drugs:			Horse	143,129	75,739
Glycerin	24,457	64,370	Horse fronts	36,093	.....
Licorice root	56	9,071	Ox	.....	11,896
Lycopodium	21,833	10,129	Sheep	159,537	65,556
Other	940	6,104	Household goods	3,599	242
Fish bladders	2,976	7,170	Jewelry:		
Flax and hemp, and manufactures of:			Diamonds	417	.....
			Silverware	613	8,090
Bolt rope	24,282	10,933	Leather, dressed	8,431	4,800
Codilla	6,168	.....	Metals, and manufactures of	8,477	3,515
Cordage	6,419	5,103	Minerals:		
Crash	3,008	359	Asbestos and platinum	.....	17,296
Hempseed	.....	17,253	Other	.....	1,216
Oakum	11,654	10,603	Paintings	3,945	1,427
Tow	4,577	.....	Rubber:		
Furs	30,127	3,896	Old	.....	3,244
Fusel oil	67,013	79,529	Sponges	8,183	8,446
Glue stock	1,790	6,406	Woodenware, toys, etc	2,634	419
Hair:			Wool, unclassified	2,495	109,540
Camel	.....	191,148	All other articles	25,097	9,023
Horse	25,548	45,138			
Other	7,059	13,069	Total	1,090,750	1,368,180

The American goods returned to the United States had a total value of $2,015 in 1911 and $3,730 in 1912.

GENERAL EXPORT TRADE.

There was a notable decrease in the shipments of wheat and oats from this port and from Reval and an increase in the shipments of rye and barley. The exports of wheat from this port in 1912 were less than 50 per cent of those for 1911, which amounted to 89,172 tons. Oats likewise declined from 520,200 tons in 1911 to 181,792 tons in 1912. The shipments of rye and barley increased by more than 100 per cent in value, but were much less important in volume. Butter declined from 16,092 tons to 15,084 and eggs from 42,448,500 dozen to 41,873,000 dozen.

In the exportation of forest products the ports of this district have a considerable share. The statistics which follow are given only in terms of weight, however, and show only the relative progress of the trade:

Ports.	1911	1912	Ports.	1911	1912
Archangel:	*S. tons.*	*S. tons.*	Narva:	*S. tons.*	*S. tons.*
Logs, dressed and undressed	51,480	50,310	Beams and sawed lumber	15,608	9,558
Planks	546,930	646,452	Planks	18,576	19,746
St. Petersburg:			Onega: Planks	55,296	93,978
Logs, dressed and undressed	11,772	11,808	Cronstadt: Planks	316,818	50,976
Beams and sawed lumber	.....	810	Total:		
Planks	405,108	737,532	Logs dressed and undressed	63,252	62,118
			Beams and sawed lumber	13,608	10,368
			Planks	1,342,728	1,548,684

SHIPPING AND FREIGHT RATES.

Owing to the late opening of this port in the spring of 1912 the shipping for the season showed a decline as compared with the preceding year both in number of vessels and in tonnage. Information from private sources gives the following:

Nationality.	1911				1912			
	Steam.		Sail.		Steam.		Sail.	
	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.
British	333	456,444	.....	.....	338	453,056	.....	.....
German	417	360,428	15	1,778	399	348,088	19	2,118
Norwegian	348	262,964	7	4,027	357	290,546	10	6,010
Danish	353	348,575	25	3,428	297	273,284	24	3,283
Russian	131	188,748	45	8,428	154	229,255	47	7,757
Swedish	338	210,472	7	2,029	304	196,629	5	481
Dutch	137	187,555	7	658	134	180,087	13	1,488
French	12	13,856	.....	.....	12	11,982	.....	.....
Belgian	13	14,670	.....	.....	10	11,213	.....	.....
Spanish	1	1,078	.....	.....	6	8,015	.....	.....
Greek	.....	.....	.....	.....	1	1,884	.....	.....
Italian	.....	.....	.....	.....	1	1,151	.....	.....
American (?)	.....	.....	.....	.....	1	516	.....	.....
Total	2,083	2,044,792	106	20,348	2,014	2,005,706	118	21,137

There was a general increase in steamship freight rates on grain from St. Petersburg to London, Hull, Hamburg, Rotterdam, and Danish and Swedish points in 1912 as compared with 1911. The rates to Stettin and Lubeck were lowered. The rates for the principal grains, in cents per 100 pounds, are given in the following table for 1911 and 1912:

Destination.	Wheat.		Rye.		Oats.		Barley.	
	1911	1912	1911	1912	1911	1912	1911	1912
	Cents.	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
Hamburg	7.62	8.88	7.16	8.54	9.03	10.65	7.94	9.37
Stettin	6.53	6.39	6.53	6.39	8.01	7.99	7.26	6.99
Lubeck	7.00	6.62	7.00	6.65	5.89	8.30	7.77	7.37
London	6.06	8.81	6.36	8.41	7.99	10.58	7.03	9.30
Hull	6.83	8.90	6.53	8.50	8.20	10.68	7.22	9.11
Rotterdam	6.43	8.16	6.15	7.79	7.73	9.80	6.79	8.61
Denmark	7.96	9.48	7.96	9.48	9.94	11.85	8.84	10.54
Sweden	7.81	9.36	7.81	9.36	9.77	11.69	8.69	10.40

COPYRIGHT AND CUSTOMS TREATIES.

An international copyright treaty between Russia and France was signed during 1912, and its provisions were extended to Germany in 1913.

A bill has been offered by the Ministry of Trade and Industry providing for the refunding of customs duties on all goods reexported and for the admission free of duty of commodities to be used in manufacturing for export. According to the Novoye Vremia, the latter provision is already applied to manufactures of cotton, hemp, and wool and to tinsel goods and matches, and it is proposed to ex-

tend it to cover manufactures of jute, rubber, and grass. A permit for free importation of such raw products is to be given by the Government for each separate importation.

FINLAND.

[Consul Jacob E. Conner, St. Petersburg.]

While a part of the Russian Empire, the Grand Duchy of Finland is economically distinct, with its own currency system, postal service, railways, and customs tariff. The rates of the last-named are generally lower than those of the Russian tariff and most raw materials are admitted free of duty. Commerce between Finland and the rest of Russia is recorded by each country as foreign rather than domestic.

Finland has an area of 144,249 square miles, of which 128,625 square miles are land, and its population at the end of 1909 numbered 3,059,324. It is divided into eight Läns or provinces, whose populations are as follows: Nylands, 368,666; Abo and Bjorneborg, 494,597; Tavastehus, 336,947; Viborg, 506,238; St. Michel, 197,295; Kuopio, 331,278; Vasa, 505,250; Uleaborg, 319,103. The greater part of the population, 85.26 per cent, live outside of the cities, and there are only nine cities with a population of more than 10,000, as follows: Helsingfors, 143,382; Abo, 49,377; Tammerfors, 45,139; Viborg, 33,494; Vasa (Nikolaistad), 20,398; Uleaborg, 19,018; Bjorneborg, 16,666; Kuopio, 15,490; Kotka, 10,019.

DOMESTIC SUPPLY OF AGRICULTURAL PRODUCTS INSUFFICIENT.

Owing to the high latitude and short summer season and to the limited cultivable area, the domestic supply of agricultural products is less than the country's requirements. In 1901 the cultivated area in Finland was slightly over 7,000,000 acres, divided among more than 270,000 holdings. Of these holdings 106,462 were of less than 7.5 acres, 78,778 were from 7.5 to 25 acres, 84,059 were of 25 to 250 acres, and 1,855 contained more than 250 acres each. There were only six holdings of more than 2,470 acres each. The latest official crop figures available are those for 1909, which give the following returns: Wheat, 133,564 bushels; rye, 12,084,853 bushels; barley, 4,887,319 bushels; oats, 19,759,488 bushels; meslin, 536,078 bushels; buckwheat, 11,002 bushels; peas and beans, 214,811 bushels; potatoes, 19,226,108 bushels; turnips, etc., 7,766,203 bushels; flax and hemp, 2,895,087 pounds.

Finland's imports of agricultural products are large, their relation to the domestic production and to Finland's consumption being indicated by the following figures for 1909:

Items.	Wheat.	Rye.	Barley.	Oats.	Meslin.	Peas and beans.	Maize.
SOURCES.							
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Crop	7,990,000	675,982,000	227,815,500	767,551,600	24,988,400	12,516,300	.....
Imports	341,771,800	666,155,000	33,443,400	49,586,400	.....	6,040,200	23,863,500
DISTRIBUTION.							
Seed	1,105,200	78,935,900	45,678,800	144,998,600	6,225,800	3,086,400	.....
For distillation	.....	4,742,500	7,132,600	215,400	249,900	.....	18,569,400
Exports	.....	4,024,300	900	8,292,500	.....	4,100	.....
For consumption	348,656,600	1,254,434,300	208,446,600	663,632,800	18,512,800	15,466,000	5,294,100

THE DAIRY INDUSTRY IMPORTANT—LIVE STOCK.

In consequence of the great amount of pasturage available, the dairy industry has been raised to a position of great importance in Finland, butter ranking second only to forest products among the exports of the country. In 1909 there were 754 dairies in Finland, of which 261 belonged to individuals, 111 to stock companies, and 382 to cooperative societies. Besides three for which data were not obtained, 671 of these dairies made butter, 10 made cheese, and 70 produced both butter and cheese. The butter output for 1909 amounted to 26,585,600 pounds, made from 651,159,500 pounds of milk. The production of cheese totaled 3,397,300 pounds.

Finland's exports of dairy products in 1911 and 1912 were as follows:

Products.	1911	1912
Butter:		
In casks—		
To Russia.....pounds..	189,007	171,378
To Sweden.....do....	172,185	100,176
To Denmark.....do....	1,455,375	438,038
To Germany.....do....	5,895,612	8,027,102
To Great Britain.....do....	18,805,884	16,561,385
In other containers—		
To Russia.....do....	563,252	753,646
To Sweden.....do....	85,281	41,387
To Denmark.....do....	243	57,254
To Germany.....do....	53,652	319,791
To Great Britain.....do....	9,480	3,836
Cheese:		
To Russia.....do....	2,176,566	2,021,158
To Denmark.....do....	11,916	.....
To Germany.....do....	220	.....
Milk and cream:		
To Russia.....gallons..	2,838,825	3,102,855

The latest figures showing the number of domestic animals in Finland are those for 1907, when there were 286,301 horses, 41,516 colts, 71,745 oxen and bulls, 1,113,633 cows, 305,886 young cattle, 904,447 sheep, 221,072 swine, 6,279 goats, and 133,749 reindeer.

FORESTS THE GREAT SOURCE OF WEALTH.

Finland's greatest source of wealth lies in its timberlands, the Crown forests alone covering 31,560,860 acres in 1910, of which approximately 13,500,000 acres were woodland. The rest of the Crown forest area was made up of cultivated fields, prairies and cleared land, bogs, swamps, and water. The principal manufacturing industries of the country are those related to the timber trade, such as sawmills, planing mills, chemical and mechanical wood-pulp factories, paper mills, etc., and the leading exports of Finland are forest products.

The quantities of the more important of these products exported in 1911 and 1912 are shown by the following table (cubic meter=35.3 cubic feet):

Products.	1911	1912
Masts, spars, logs, etc.....cubic meters..	528.426	461.327
Pit props.....do....	1,341.165	1,340.637
Firewood.....do....	901.251	1,162.833
Planks.....do....	403.526	457.021
Battens.....do....	856.915	938.458
Boards.....do....	1,478.400	1,552.427
Timber.....do....	125.878	128.806
Staves and headings.....do....	107.805	135.092
Birch poles.....do....	29.237	32.239
Joiners' work.....pounds..	1,315.644	3,547,032
Wood wool.....do....	2,062.847	710.268
Thread reels.....do....	21,948,855	21,535,438
Wood pulp:		
Mechanical—		
Wet.....do....	16,595,623	20,552,496
Dry.....do....	87,424,603	101,778,587
Chemical—		
Wet.....do....	176,370	2,041,260
Dry.....do....	147,673,868	180,381,368
Pasteboard.....do....	103,779,482	115,911,127
Wrapping paper, etc.....do....	131,741,467	142,045,580
Wall paper.....do....	9,434,231	8,582,226
Print and copy paper.....do....	119,825,023	126,282,168
Writing and elephant paper.....do....	9,111,342	6,673,447

TIMBER AND PAPER TRADE.

In many respects 1912 was an exceptional year for the timber and paper-pulp trade. Owing to war, strikes, bad weather, and other causes, nearly every vessel carrying these products made one or two trips less than usual, with a resulting increase in freight rates amounting on some commodities to 100 per cent. The season was favorable, with plenty of rain; the waterfalls furnished the required power, and the factories worked night and day. Pulp-wood prices rose by 25 to 40 per cent, and, notwithstanding the increased production, wood-pulp prices showed a distinct net advance, giving promise of a corresponding advance in paper prices. More than half of the wet mechanical pulp was sent to France, Great Britain being the next largest buyer. Russia, Great Britain, France, Germany, and Belgium took the major portion of Finland's pulp exports of all kinds. Russia took most of Finland's paper exports, Great Britain and Germany also being heavy buyers.

Most of the exports of boards, which are the principal sawed-lumber products exported, went to Germany, followed in order by France, Belgium, Great Britain, the Netherlands, and Denmark. Germany led as an importer of boards, and Great Britain was the largest purchaser of pit props, planks, battens, staves, planed goods, and cuttings.

FISHERIES—MINERAL RESOURCES.

The fisheries of Finland are of considerable importance, Baltic herring being the principal fish taken. In 1909, the latest year for which statistics are available, the catch of salmon amounted to approximately 560,000 pounds; of whitefish and grayling, to about 1,016,000 pounds; Baltic herring, to approximately 31,812,000 pounds; smelt and "mujka," approximately 4,807,000 pounds; sprat, about 77,000 pounds; and other varieties to about 7,817,000

pounds. The exports of fresh, smoked, and salted fish from Finland in 1912 were valued at $1,065,600 and the imports at $915,800, showing that the country as a whole has need of practically its entire fishery output. The imports consist mainly of herring and sardines.

Granite predominates among the rocks of Finland, and is quarried extensively for building purposes. The only metallic minerals of any importance found in the country are bog-iron ore and copper, and the production of both is small. In 1908 the production of bog-iron ore amounted to 10,354 short tons, as against 36,495 short tons in 1907, and from 55,000 to 83,000 short tons per annum between 1890 and 1900. Mountain ore was formerly produced to some extent, ranging from about 50 short tons in 1888 to nearly 34,000 short tons in 1900, with wide fluctuations from year to year. The output of gold in Finland also fluctuates widely, but in no year during the decade ending with 1908 did it exceed 4,500 grams. The highest return of recent years being obtained in 1909, when the production was 4,868 grams. From 1880 to 1890 the annual production was 13,500 to 22,800 grams, and in earlier years the output ranged from 4,000 to 57,000 grams.

INDUSTRIES OF FINLAND.

Finland is not especially favorably situated for manufacturing, but the many streams offer an abundance of power and the manufacturing interests of the country have attained a large degree of importance. The latest official industrial statistics are those for 1909, which give the following résumé of the industrial situation in that year:

Branches of industry.	Establishments.	Employees.	Wages.	Horsepower.	Value of raw material used.		Value of products.
					Total.	Finnish industrial products.[1]	
Mines and smelters	36	109	.....	.....	.....	.....	$3,000
Metal works	49	2,712	$522,000	8,521	$1,399,000	$863,600	2,257,700
Machine shops	80	7,791	1,800,300	6,835	1,454,100	440,900	4,820,900
Makers of instruments of precision	11	153	29,000	133	25,800	9,900	68,900
Stone, clay, glass, coal, and peat industry	303	8,216	1,319,800	4,155	491,400	142,000	3,388,500
Chemical works	38	969	119,800	3,107	254,300	95,400	577,900
Tar, oil, and gum industry	46	464	81,400	455	851,600	136,500	1,202,600
Hide and hair industry	46	1,953	373,400	2,250	2,319,200	578,100	3,034,200
Textile industry	89	13,018	1,809,400	20,616	5,312,200	1,136,500	11,332,900
Paper industry	112	10,911	2,204,000	89,004	5,535,900	4,567,500	10,591,700
Wood industry	625	27,016	4,304,000	34,469	987,700	730,600	21,116,100
Food, drink, and tobacco factories	2,400	11,270	1,570,100	30,400	13,430,600	3,323,900	18,006,100
Lighting, power transmission, and waterworks	50	1,020	262,000	17,215	.....	.....	1,472,900
Graphic industry	146	3,042	806,800	1,150	681,700	582,300	1,546,200
Other	5	60	15,100	22	17,000	8,800	48,606
Total	4,038	88,704	15,217,100	218,332	32,760,500	12,616,000	79,468,200

[1] Products of Finnish industries used as raw materials.

The 218,332 horsepower, representing the energy required by the industries of the country in 1909, were obtained from the different sources as follows: Water wheels, 10,140 horsepower; water turbines, 109,345 horsepower; steam engines, 75,975 horsepower; steam turbines, 8,567 horsepower; combustion motors, 4,687 horsepower; electric motors, 9,430 horsepower; and other motors, 188 horsepower.

COOPERATION AND STOCK COMPANIES.

Cooperation has a strong foothold in Finland and in 1909 there were 1,737 cooperative societies in the country, of which 342, with 15,840 members, were agricultural; 331, with 29,002 members, operated dairies; and 516, with 78,661 members, were for industrial purposes; the remaining 548 being organized for various purposes.

Commercial conditions in Finland are also reflected by the following table showing the number of stock companies with a capital of more than 100,000 marks ($19,300) in 1907:

Classes of companies.	Number.	Reserves.	Capital.
Real estate	106	$7,108	$3,613,757
Agriculture	9	.....	637,286
Industrial:			
Metallurgical	33	57,900	4,082,722
Textile	25	558,704	9,076,758
Paper	21	.....	6,284,273
Wood	54	965,000	11,222,564
Distilling and brewing	43	.....	3,353,954
Tobacco manufacturing	5	115,800	1,398,285
Other	81	55,642	11,429,711
Commercial:			
Hotels, restaurants, etc	8	.....	387,013
Bookselling, publishing, etc	22	68,900	1,126,753
Other	78	156,500	5,300,938
Credit	15	7,617,580	19,633,760
Insurance	11	792,865	4,015,965
Communications:			
Railways	5	.....	871,588
Shipping	31	54,209	3,203,190
Telephone	5	.....	424,600
Other	5	.....	708,117
Other	10	.....	364,461
Total	567	10,450,208	87,135,695

GROWTH OF FOREIGN TRADE.

The steady growth that has characterized the foreign trade of Finland for many years past continued during 1912. The combined imports and exports were valued at $155,790,179, while in the preceding year they amounted to $147,103,828, showing a gain of $8,686,351. The gain in imports is found largely in materials for manufacture, rather than for immediate consumption. Taking the average annual imports during the period 1887–1889 as 100 for a base, the raw material imports during 1912 would be represented by 526, imports of machines and engines by 503, foodstuffs by 400, and other industrial products by 275. A detailed comparison of the imports and exports during 1911 and 1912 is given by the following table:

Classes of merchandise.	Imports.		Exports.	
	1911	1912	1911	1912
Live animals	$62,100	$60,000	$755,200	$780,900
Meat, game, and dairy products	1,977,700	2,398,400	7,699,000	7,898,500
Fish—fresh, smoked, and salted	705,600	915,800	1,019,800	1,065,600
Flour and cereals	19,494,900	16,851,800	272,900	241,400
Vegetables and root crops	796,500	945,900	9,600	21,600
Fruit and berries	1,440,200	1,676,200	381,800	363,600
Canned goods	184,700	202,600	283,500	253,400
Colonial goods and spices	10,355,400	11,184,300	252,800	219,600
Drinks	1,851,100	2,045,000	1,700	3,900
Drugs	188,700	200,500	800	400
Bones, bristles, horns, etc	532,100	571,000	104,200	95,300

Classes of merchandise.	Imports.		Exports.	
	1911	1912	1911	1912
Skins, leather, pelts, and furs	$2,761,400	$3,654,600	$2,523,900	$2,679,800
Plants, grains, etc	4,190,800	3,980,400	348,600	343,300
Wood, and manufactures of	748,500	788,800	32,238,100	33,468,500
Wood pulp and paper	528,800	550,200	11,226,600	12,543,600
Material for spinning	4,421,800	4,767,100	32,400	14,900
Cordage	1,626,800	1,852,200	496,000	405,900
Woven goods	4,780,400	5,082,500	1,162,100	1,280,000
Ready-made clothing	1,696,900	1,763,100	6,800	6,800
Gums, resins, etc	2,433,700	2,524,100	203,200	152,500
Oils and fatty substances	2,806,200	3,267,100	49,400	122,000
Perfumery	200,700	210,800	1,500	1,500
Minerals, and manufactures of	4,011,700	5,009,300	807,100	1,072,900
Chemical products	1,252,800	1,347,900	115,200	79,300
Explosives and inflammables	53,700	53,300	31,500	12,900
Colors and coloring material	1,066,700	1,118,200	46,900	39,800
Metals, and manufactures of	8,016,100	8,569,200	433,500	350,500
Machines, motors, and implements	4,567,700	5,404,800	335,000	872,000
Instruments and watchmakers' articles	911,300	1,024,300	200	400
Carriages	309,200	437,300	23,400	31,800
Ships and boats	155,900	442,200	315,000	620,700
Works of art, printing, etc	690,400	717,400	39,600	36,700
Articles of luxury, etc	564,900	605,800	.....	.....
All other articles	403,900	435,000	47,300	53,100
Total	85,789,300	90,657,100	61,314,600	65,133,100
Reexports	.....	.....	358,600	456,400
Grand total	85,789,300	90,657,100	61,673,200	65,589,500

CEREAL IMPORTS.

The decrease in the imports of foodstuffs during 1912 concerns American trade directly, because of the importations of wheat and wheat flour, hence the following table is given to show the quantities of the various cereals imported into Finland during 1911 and 1912:

Products.	1911	1912
	Short tons.	*Short tons.*
Buckwheat, from Russia	16.6	20.1
Buckwheat flour, from Russia	14.5	18.4
Oats, chiefly from Russia	23,805.8	17,123.4
Oatmeal:		
From Sweden	28	32
From Russia	11.7	8.5
From Germany	10.4	11.1
From other countries	5.6	25.7
Wheat:		
From Germany	229.7	447.3
From Great Britain	22.3	33.3
From Russia	18.9	24.5
From other countries	1.8	1
Wheat flour:		
From Germany, chiefly American	69,387.5	63,211
From Russia	19,430.3	19,163.1
From Great Britain	7,503.3	12,635
From Denmark	11,040	7,939.3
From other countries	2,706.6	2,289.8
Wheat, ground or crushed, chiefly from France	3,535.5	3,237.5
Rye:		
From Germany	53,546.3	29,182.4
From Russia	32,785	25,242.6
From other countries	9.4	19.9
Rye flour:		
From Russia	156,752	92,867.3
From Germany	82,438	85,549.6
From other countries	37.5	88.9
Barley, chiefly from Germany	4,423.9	8,067.8
Maize (corn):		
From Russia	764.6	1,733.2
From Germany	3,655.3	1,049.5
From other countries	2,478.5	3,322.5
Rice, unhulled	10,946.8	10,229

The general decline in the importation of cereals and flour is attributed to the surplus accumulated during the preceding year and remaining on hand, so that an increase of such importations is expected for 1913.

GOVERNMENT REVENUES.

Finland's total revenues for 1912 amounted to $11,019,618, as against $10,238,691 for the preceding year. They were derived from the following sources:

Sources.	1911	1912
Import duties	$8,979,049	$9,609,877
Shipping dues	269,364	288,198
Bonded-warehouse rent	22,887	32,514
Tobacco import duties	725,631	778,853
Transit bonded-warehouse rent	728	569
Export duties	244,593	259,604
Sawing dues	77,858	84,837
Expedition dues	86,272	91,167
Miscellaneous	3,937	1,041
Gross total	10,410,319	11,146,660
Refund of duties	171,628	127,042
Net total	10,238,691	11,019,618

SHIPPING.

Statistics showing the clearances from Finnish harbors in 1912 are not yet available, but in 1911, 34,012 ships left these ports, with a registered tonnage of 9,201,680. About three-fourths of the tonnage represented sailing vessels. The steamers, however, show a more rapid increase, both in domestic and foreign commerce. Great Britain heads the list both as to nationality of the vessels and port of destination, with Russia and Germany close competitors for second place and the trade tending toward the former country. The three Scandinavian countries follow in rank. The shipping season in 1911 averaged 245 days for all the ports of Finland; Abo, Eckero, Marienhamm, and Hango being open throughout the year.

The coasts of Finland are fringed with numerous bays and inlets, with many streams reaching up into the well-wooded interior. All conditions, except its high latitude, combine to make it a center of maritime commerce, and the Finns are accounted good sailors. A large fleet of small vessels is kept busy during the open season carrying forest products to other countries and to the larger Finnish ports, returning with merchandise for the interior of the country. At the end of 1911, Finland's merchant fleet consisted of 3,425 vessels, with a total registered tonnage of 392,408, as compared with 3,319 vessels, of 392,883 tons, at the end of 1910. The tonnage of steam and sailing vessels registered at the principal ports of Finland in 1911 was as follows:

Port.	Steam.	Sail.
	Tons.	*Tons.*
Helsingfors	42,360	110,464
Viborg	39,367	44,489
Vardo	31,291	31,291
Abo	13,882	28,854
Vasa	8,361	19,179

FINLAND'S INTERIOR TRANSPORTATION SYSTEM.

The transportation system of Finland consists of 2,765 miles of navigable waterways, carrying about 1,600,000 tons of merchandise per annum, and 2,444 miles of railways. Practically all of the railways of Finland were built and are operated by the State, the mileage of these roads being 2,214. The private lines, both broad and narrow gauge, have a total mileage of 230 miles.

The gross receipts of the State railways, according to the figures printed in Finnish and Russian journals, amounted to $9,650,000 in 1911 and to $10,317,780 in 1912. The following figures, in short tons, show the character of the freight handled:

Freight.	1911	1912
	Tons.	*Tons.*
Agricultural products	609,122	737,219
Food products, not included in the above	140,117	153,144
Other industrial products	1,089,339	1,426,447
Forest products	1,830,531	1,966,345
Miscellaneous	86,665	105,249

The original cost of construction of the State railways amounted to $51,376,600 at the close of 1911, "whereas the enhanced capital cost," according to Mercator, "is estimated at not less than $79,728,300." Freight traffic showed a satisfactory increase in revenues, but the passenger traffic is inconsiderable. Imperial consent has been given for the construction of two new railways.

BANKING—INSURANCE—PUBLIC WORKS REVENUES.

The net profits of the banks of Finland totaled $1,429,234 in 1912, as against $1,644,168 for 1911, the decline being attributed to greater cautiousness on the part of the managements. The directors of the several private banks of Helsingfors recommended dividends ranging as high, in one instance, as 13 per cent.

Domestic loans showed only a slight increase over those of the preceding year, in spite of the increased business activity. The postal savings bank reported a considerable increase in its business.

The five Finnish life insurance companies report the amount of policies issued during the last five years as follows: 1908, $12,834,500; 1909, $16,308,500; 1910, $20,745,500; 1911, $24,588,200; 1912, $26,132,200.

The city waterworks of Helsingfors gave an excess of income over expenditure in 1912 amounting to $161,268, and a net income of 5.94 per cent on the investment. The city gas works gave an excess of income over expenditure of $111,681, or 3.58 per cent on the investment. The city electric plant's income exceeded its expenditure by $198,627, giving a net profit of 7.95 per cent.

WARSAW.

[Consul Thomas E. Heenan.]

The Warsaw consular district embraces all of Russian Poland and the neighboring Governments of Grodno, Minsk, and Volhynia, with a total area of 126,715 square miles and a population of 20,740,700. The population is divided among the different Governments as follows: Kalish, 1,126,700; Kielce, 965,200; Lublin, 1,508,300;

Lomzha, 683,600; Petrokoff, 1,933,400; Plotsk, 700,000; Radom, 1,080,800; Siedlce, 981,900; Souvalki 667,300; Warsaw, 2,482,000; Grodno, 1,951,700; Minsk, 2,813,400; Volhynia, 3,846,500.

The population and leading industries of the principal towns in this region are as follows:

Towns.	Population.	Industries.
Brest-Litovsk	47,500	River, canal, and railway trade center.
Grodno [1]	44,000	Tobacco, machinery, soap, candles, firearms; trade in lumber, grain, and flax.
Kalish [1]	28,000	Breweries; leather and textiles.
Kielce [1]	15,000	Breweries, mills, marble works; banking, and commerce.
Lublin [1]	59,500	Technical schools; woolen cloth tobacco; trade center.
Lodz	328,500	Cotton and woolen goods.
Lomzha [1]	18,000	Trade in grain, wood, and tar.
Minsk [1]	100,000	Leather, agricultural implements, tobacco, spirits.
Petrokoff [1]	37,000	Small industrial and commercial activity.
Plotsk [1]	27,000	Manufactories of agricultural implements, matches and soap; imports iron, coal, salt, petroleum, etc.; exports sugar beets, timber, and firewood.
Pultusk	17,500	Breweries, mills.
Radom [1]	32,000	Tanneries and machine shops.
Siedlce [1]	23,000	Breweries; railway, and river trade.
Souvalki [1]	28,000	Breweries, important border trade.
Warsaw [1]	771,000	Polish capital; railway center; university; metal wares, machinery, food products, chemicals, matches, spirits, tobacco, shoes.
Zhitomir [1]	88,000	Commercial center; tobacco, spirits, soap.
Bielostok	76,500	Woolens; railway center.

[1] Provincial capital.

AN UNFAVORABLE YEAR FOR POLISH INDUSTRIES.

This district continued to feel the effects of the 1911 crisis through the first half of 1912, and the year, as a whole, was unfavorable to its commerce and industries. The total amount of protested bills returned from Russia proper was most unusual, and the number of bankruptcies in Russia proper had a most depressing effect on the Polish markets, which are almost entirely dependent on those of Russia.

The metallurgical and mining industries, which flourished on account of their connections with the iron syndicate, the cement and brickworks, and other industries connected with the building trade, and the timber trade, which found a good demand both at home and abroad, were exceptions to the general rule. The price of land has doubled in the past 10 years and land speculation still proved somewhat attractive. Grain prices were generally good, but other agricultural staples, such as wool and hops, brought extremely low prices. The sugar industry was also less satisfactory than in the preceding year, the average dividend of nine sugar factories, whose shares are quoted on the Warsaw stock exchange, being 7½ per cent, as compared with 10.03 per cent in 1911.

The money market reflected the general economic situation. Speculation was active on the stock exchange during the first few months, followed by a crisis in which the speculators lost millions. Ready money was dear, and bank discounts attained a high figure. Excessive flotations of land mortgage bonds and unhealthy speculation in common stocks helped to weaken the situation. Some industrial securities showed greater strength, and others were left untouched on account of lack of interest. Sugar-factory shares seemed at times to promise livelier movement, owing to the bright outlook for the 1912–13 campaign, but the demand was retarded by the general weakness of the market.

HOP AND WOOL FAIRS.

The annual hop fair opened in October, 1912, with 1,077 hundredweight of hops from the 1911 crop still left unsold in the bank stores, indicating that the brewers and wholesale dealers must have had large stocks on hand. Information from the hop fields led to the expectation of a large crop of good quality, but toward the close of the growing season these expectations were disappointed by excessive rains and early frosts, so that the actual harvest was 85 to 90 per cent of normal, although the acreage planted had been increased. During the five days of the fair, 5,629 hundredweight of hops were placed on sale, including the unsold remainder from the preceding year. This quantity would have been increased but for railway delays in delivery. Most of the principal firms of Nuremburg, Furth, Bamberg, Lemberg, and other hop centers were represented at the fair and buying was lively. Prime quality hops brought $8.50 to $10 per pood (36.112 pounds), and extra fine parcels brought $10.50 to $11.50 per pood, these prices being $7 to $8 below the average. Second quality sold for $4.50 to $5.50 per pood, and third for $2.75 to $3.50 per pood. Hops of the 1911 crop brought $2.90 to $3.50 per pood in 500-pound lots. During the fair 4,305 hundredweight were disposed of. Best-quality hops were in the greatest demand, especially for the English market, and the result of the fair was considered favorable.

The wool fair was, as usual, held at Warsaw at the end of June, the total amount offered being 7,622 hundredweight, including the amount left over from 1911, or 2,063 hundredweight more than was offered at the 1911 fair. Buyers demanded a reduction of prices by $2 to $2.50 per pood from those of the preceding year, and not a single transaction took place during the two days of the fair, as the sellers would not concede more than $1 to $1.50. The local manufacturers began buying after the close of the fair, but there were no purchasers from Russia nor from foreign countries.

FISH CULTURE—CITY BUDGET.

There are at present in Poland 70 pisciculture establishments with 15,660 acres of water area. The first attempt at raising fish for market appears to have been made at Gabrovo, Novo-Alexandrovsk, in 1817, and since 1880, when there were 13 plants, the development of the industry has been rapid. Some of these establishments obtain as high as 460 pounds of fish per acre per annum and some of these fish, being of good quality, bring high prices.

Warsaw is the third city of Russia in both population and the size of its annual budget. In 1904 the budget amounted to $9,850,000, and was the largest city budget in Russia. It was decreased in following years, falling to $4,750,000 in 1909. For 1913 the budget committee places receipts and expenditures at $7,541,500 each.

LODZ, THE MANCHESTER OF POLAND.

Lodz is the principal industrial center of Poland, being known as the "Manchester of Poland," and ranks among the leading cotton-manufacturing centers of the world. Its woolen mills also give it first rank in Poland in that industry.

Reliable statistics are difficult to obtain in this country on account of the reluctance of manufacturers and business men to give any details regarding their operations. An idea of the industries of Lodz is obtainable, however, from the returns gathered together for the first time by the stock exchange committee, supplemented by the figures collected by the statistical publication, "Industry and Trade of the Kingdom of Poland for 1912."

The cotton industry of Lodz has been divided into five groups by the stock exchange committee. In the first of these groups are placed those concerns which manufacture the raw cotton, viz, 6 spinning mills, 38 weaving mills, and 15 combined spinning and weaving mills, with a total of 889,523 spindles in use in the 59 factories. The second group comprises the concerns manufacturing wool, viz, 10 spinning mills, 15 weaving mills, and 26 combined spinning and weaving mills, operating in all 299,750 spindles. The third group comprises the establishments manufacturing both wool and cotton, viz, 7 spinning mills, 35 weaving mills, and 20 combined spinning and weaving mills, with a total of 106,827 spindles for the 52 establishments. In the fourth group are placed the establishments manufacturing to order only, 121 spinning mills with 232,827 spindles, while group 5 consists of 160 miscellaneous factories.

In 1910 there were 144 spinning mills, 205 weaving mills, and 54 combined spinning and weaving mills in the Lodz yarn industry, bringing the total number of factories up to 569, using 1,536,927 spindles, and employing 82,086 workmen. Other branches of industry employed 6,035 workmen.

The total turnover of the textile industry in 1910 was $87,159,474, divided as follows: Spinning mills manufacturing to order, $1,673,950; weaving factories, $1,099,775; cotton mills producing yarn, $4,778,485; woolen-yarn mills, $899,598; cotton-weaving establishments, $4,542,571; woolen mills, $1,598,631; combined cotton and wool weaving factories, $10,394,799; spinning and weaving factories, $36,593,840 worth of cotton goods, $16,964,100 worth of woolens, and $1,743,572 worth of combined cotton and woolen goods; dyeing and finishing plants, $3,137,508; hosiery factories, $2,574,848. The other industries of Lodz showed a total turnover for the year of $4,846,207, divided as follows: Tanneries and soap works, $115,477; chemical industries, $410,577; flour mills, $179,941; breweries, $520,447; wood-manufacturing concerns (no answers from three factories employing 350 workmen), $143,151; paper industry, $229,376; brickworks, $471,785; iron industry, $2,151,886; miscellaneous (no replies from five factories employing 447 workmen), $623,567.

The figures collected by the authors of Trade and Industry of the Kingdom of Poland for 1912 show a larger turnover for Lodz, as indicated by the following table:

Industries.	Factories.	Employees.	Turnover.
Textile	514	83,457	$103,827,211
Metal working	148	4,600	3,594,504
Mineral	15	247	340,000
Chemical	19	638	865,000
Paper	20	225	70,000
Food preparation	32	461	460,000
Miscellaneous	19	159	Not given.
Total	767	89,887	.....

Lodz produces about one-third of Poland's total industrial output, the turnover for the entire Kingdom being estimated at about $430,000,000.

The average annual wage in the textile industry was $165, as compared with an average of $220 in the other industries. The factory owners paid an average of $3.75 per employee for medical help, and also insurance premiums aggregating $94,540 and compensation amounting to $42,250 for the entire industry.

TRADE WITH THE UNITED STATES.

The exports to the United States, as declared at the Warsaw consulate in 1911 and 1912, were as follows:

Articles.	1911	1912	Articles.	1911	1912
Beet seed	$49,398	$66,864	Mushrooms	.....	$1,548
Books	12,005	27,109	Rubber waste	.....	2,127
Caviar	65,459	10,197	Toys	$1,929	1,569
Church goods	1,616	4,843	Wool	9,200	3,758
Flax and tow	264,633	530,823	All other articles	4,328	2,196
Hair, human	4,318	13,830			
Leather	1,716	.....	Total	414,602	664,864

The approximate values of the principal imports into the Warsaw consular district from the United States in 1912 were as follows:

Articles.	Value.	Articles.	Value.
Cotton	$10,111,500	Salmon and lobster	$25,000
Leather	2,500,000	Adding machines	25,000
Agricultural machinery	500,000	Medical preparations	25,000
Typewriters	215,000	Vaseline	15,000
Motor cars	90,000	Dried fruits	14,000
Cash registers	43,000	Steel	12,000
Hardware	40,000	Scales	6,000
Electric elevators	35,000	Office furniture	5,000
Machine tools	30,000		
Wringers	25,000	Total	13,716,500

GENERAL FOREIGN TRADE OF POLAND.

The principal exports over the Polish frontier, according to the customhouse returns, were as follows in 1911 and 1912:

Articles.	1911	1912	Articles.	1911	1912
	Tons.	*Tons.*		*Tons.*	*Tons.*
Barley	185,332	189,046	Boards, laths, sleepers	207,423	266,408
Bran	542,196	583,176	Maize	11,027	58,308
Flax and tow	71,692	60,366	Oats	103,241	72,688
Flaxseed	11,172	10,382	Rye	20,523	13,702
Hemp and tow	39,110	31,951	Sugar, moist	211,578	129,980
Hides	3,224	6,050	Wheat	12,521	24,149
Lumber	388,715	503,416	Eggs	[1] 602,576,000	[1] 538,370,000
Planks	75,557	89,372			

[1] Pieces.

The principal imports through the customhouses on the Polish frontier during 1911 and 1912 were as follows:

Articles.	1911	1912	Articles.	1911	1912
	Tons.	*Tons.*		*Tons.*	*Tons.*
Machines and apparatus	43,141	43,735	Uncleaned wool	25,020	26,678
Agricultural machinery	5,594	7,431	Spun wool	613	1,112
Portable engines with thrashers	645	194	Dressed wool	2,144	854
Parts of engines and machines	3,869	9,138	Twisted wool:		
Raw cotton	49,847	37,351	Undyed	2,112	1,241
Raw silk	177	177	Dyed	774	483

SIBERIA.

[Consul John F. Jewell, Vladivostok.]

Herodotus is said to have refused to speak of the fertility of Babylonia in olden days, for he thought that none would believe him. When one studies present day conditions in Siberia, and travels around the world, as the writer has recently done, he will meet few people who have any economic or academic interest in this vast country, but he will meet many who would rather cling to preconceived ideas of Siberia than to learn of its present phases of development. Yet this is one of the most interesting of the new developing countries of the world. Its present has been compared with Canada of a generation ago. Its settlers are, to a certain extent, Siberians, with a forming public opinion, urging its needs and helping to shape its own policies, as well as developing its great material resources, yet its black-earth zone has a population of only 8 to the square mile.

Western and central Siberia is an untouched granary; in the north valuable timber lies in its virgin forests. There are enough fish in Siberian waters, if properly conserved, to affect the cost of living to a great extent, and this industry is being greatly developed. Its mines will yield their wealth with modern machinery and proper management. The extension of railways and the development of communication by its great waterways will furnish markets for the products of this great territory, which extends from the Chinese boundaries to the Arctic Ocean and 6,000 miles from the Ural Mountains eastward to the Pacific Ocean.

HEAVY IMMIGRATION—ECONOMIC SITUATION IMPROVING.

Emigration from European Russia to Siberia was more active last year than in 1911. According to the Board of Emigration, the emigrants who went by way of Tcheliabinsk numbered 259,585, divided as follows: Single men, 24,499; members of families, 176,528; pioneers or scouts, 58,558. In 1911 the total was 226,062, made up of 28,272 single men, 161,519 persons in families, and 36,271 scouts. The number returned from Siberia dropped from 142,952 in 1911 to 98,383 in 1912, made up of 23,215 single men, 34,099 persons in families, and 41,069 scouts. The land granted for settlement by emigrants, which was 7,965,000 acres in 1911, was reduced by half in 1912, but the Board of Emigration established 400,000 persons on land holdings during the latter year. Of the land granted in 1912, 66 per cent was for the use of communities and the remainder for separate holdings.

At the same time, the area of land allotted for settlements of the Kirghiz was considerably enlarged, 2,011,500 acres being placed at the disposal of those who wished to give up their nomadic life. This is 931,500 acres more than was originally planned for this purpose. More attention was given to road building in 1912, and more money was spent for that work than in 1911. Means were also adopted for the improvement of the water supplies on the different holdings. There were 2,500 wells dug during 1912, or 900 more than in the preceding year. Considerable attention was paid to land measurement and surveying.

Emigration to the unoccupied lands beyond the Urals has been organized as part of a studied plan to completely Russify this great territory and to equalize the problem of food supply and the birth rate. The Imperial Government supplements this work by improvements in the methods of cultivation, and, as in other parts of the Empire, improved implements, agricultural machinery of all kinds, better seed, and a rotation of crops are being gradually introduced, while the breeding of live stock is also receiving attention. The peasant now has the opportunities afforded by the organization of small agricultural societies, mutual credit organizations and savings banks, and it has been decided to establish a government colonization bank in one of the chief cities of eastern Siberia, with branches in many places, to make loans to colonists and assist the money market.

Among the measures adopted for encouraging and organizing emigration to Asiatic Russia, the most important are the rules for renting lands without auctions in the newly arising cities and the districts destined for cattle breeding. The rules simplifying land renting are expected to attract craftsmen, tradesmen, and capitalists to Siberia. The Department for Land Settlements has also issued different rules concerning settlements by persons not belonging to the peasant or citizen classes. Noteworthy expeditions for soil and botanical investigations in the Yakutsk and Trans-Caspian districts were organized in 1912.

There is a change coming over the economic life of western and central Siberia, which is also noticed in the eastern Provinces. Bazaars and public fairs, which were so important in the commercial life in former days when the inhabitants were isolated, have given way to a large extent before the establishment of branches of wholesale commercial firms dealing with smaller firms throughout the country. The railways have brought about quicker transit, and while reducing the cost of manufactured articles, the rates are still too high to insure the sale of products at great distances, except furs, minerals, dairy produce, and valuable pine timber.

With better communication and a growing division of labor has also come a corresponding higher standard of living. While primitive in many respects, this region has a developing civilization which is no longer satisfied with the social conditions of the past, and which now requires articles which were not known, or could not to be had before cheap transport removed Siberia's economic isolation. The Trans-Siberian Railway opened up a vast country, but its branches north and south, all of which are fed by a great river traffic, are opening up rich areas to colonization, trade, and civilization.

WAGE EARNING REPLACES HOUSE INDUSTRIES—AGRICULTURE PROFITABLE.

A visit to any city in Siberia close to the avenues of communication will show evidences of progress. With the development of natural resources and commerce there is also an increase in the amount of workshop and small-factory industry in distinction to the former peasant-family work, which is on the decline. After paying taxes and buying the ordinary necessities of life, the average peasant has something with which to purchase extra necessities and even a few luxuries. They are nearly all self-supporting, as their chief articles of food cost only the labor to produce them. A traveler writes as follows:

The economic condition of the Siberian peasant shows, in fact, in a striking way how comparatively prosperous peasant communities may become when they are surrounded by fertile land and are content to live simple lives. I had many surprises while I was in Siberia. Instead of convict prisons I saw modern urban centers springing up amid every sign of the growing spirit of Western commercialism. Instead of uninhabited wastes, I now saw wide tracts of the black-earth zone dotted over with peasant communities, quietly pursuing their agricultural occupations. The agriculture was indeed rude and primitive, but the peasant farmers were living their simple lives with few wants and apparently few cares.

Western Siberia began to export wheat to Russia in Europe in 1899. Butter is the most important product and is exported more profitably than cereals. The Government has taken great interest in the development of the dairy industry. Danish, German, and English firms are engaged in buying western Siberian butter, having their representatives in the country who send the butter to refrigerators along the railway. About 30,000 tons of meat are exported to Russia in Europe from western Siberia annually, the chief centers of that trade being Omsk and Petropavlosk. The southern area of this section is largely occupied by Kirghiz, and from the Kirghiz Steppes the Siberian peasants receive stock for the extension of dairying. As in portions of Australia, there is a tendency to the breaking up of large grazing areas, and this will likely continue with the development of dairying and the cultivation of cereals. There are dairy institutes at Barnaul, Kainsk, Kurgan, and Omsk. Bacon-curing plants have been established also in this district.

BUTTER—METALS—FURS.

The first butter factory was built in Tobolsk Province in 1894, and in 1912 there were 1,200 of these factories in that Province, 700 being on the artel basis. In Tomsk Province in 1895 there were 12 butter factories, and in 1912 the number had increased to 2,200. In 1894 Siberia exported 400 poods (about 7 short tons) of butter, while in 1912 it exported 4,300,000 poods (77,642 short tons), valued at over $30,900,000. It will thus be seen that butter making brings to Siberia far more gold than does its gold mining.

In 1912 there was obtained in Siberia 1,014,157 troy ounces of gold and 134,465 troy ounces of silver, amounting in value to $20,687,094. The greatest amount of metal was collected in the Bodaibo gold laboratory—320,449 troy ounces of gold and 29,453 troy ounces of silver, totaling $6,554,490. Krasnoyarsk laboratory had 2,949 troy ounces of gold and 2,594 troy ounces of silver, valued at

$545,498. Tomsk laboratory had 53,968 troy ounces of gold and 15,699 troy ounces of silver, amounting to $1,095,267.

The fur sales for 1912 were not as good as in 1911. Squirrel skins from the Yenisei and Ob Rivers at the Irbit fair for European Russia and abroad brought $0.22 to $0.23 each. Later sales were higher. The dark furs were sold only to Russia. The total amount of furs was a little over one-third of that sold in 1911, and merchants complained of high buying prices. The following is quoted from a reliable writer on economic conditions:

> The fur trade was the earliest industry in Siberia. It was the richness of the country in furs that first attracted the attention of the Russians to the land east of the Urals, and the northern forest zones, between latitude 55° and 66°, have been the hunting ground for the best furs since the sixteenth century. To the markets of Tiumen, Tobolsk, and Irbit are brought each autumn the products of the fur hunters. Sable ground is still found up to latitude 62°, chiefly on the southern Sosva River and in the districts of Surgut, Beryoza, and Urgan. The fur zone, although not so rich as formerly in the best qualities, is still very productive and shows no sign of exhaustion. The growing demand has caused prices to rise, and the cornering of fur stocks by Jewish dealers in Siberia is also an important factor to be reckoned with.

The prohibition of the killing of sable throughout Russia for three years went into effect in 1912.

SIBERIA AS A MARKET FOR AGRICULTURAL MACHINERY.

The economic growth of Siberia is noticeable, among other things, in the increasing demand for agricultural machinery and implements. Siberia, as far as Lake Baikal and part of the Transbaikal Province, receives agricultural machinery via Tcheliabinsk. The greatest import of agricultural machinery occurred in 1912, but exact figures are not available. According to information supplied by the Immigration Organization in 1909, the imports of agricultural machinery into Siberia via Tcheliabinsk amounted to 74,937 tons, valued at $10,000,000. Owing to bad crops in 1910 and the large importation during the previous year, the imports decreased to about $6,000,000, but in 1911, notwithstanding a crop failure in some localities, the imports again increased to $8,000,000, or about $500,000 more than the total for 1908.

During the four years 1908–1911 the total imports via Tcheliabinsk amounted to $32,000,000, of which $12,000,000 were imported by the Colonization Department. This department has 230 depots, branches, and commission houses in Siberia, and is one of the largest organizations. It controls local prices to some extent. In 1912 the Colonization Department sold not only machines and implements, but also a small quantity of seeds, making a total turnover of $3,600,000, and it expects a turnover during 1913 of not less than $3,900,000.

According to official information private firms have more than 600 warehouses and branches for the sale of agricultural machinery and implements in Siberia, with a turnover of $5,000,000 to $5,500,000. The largest firm is the International Harvester Co. of Russia, which is a branch of the International Harvester Co. of America and has a factory at Lubertzy, near Moscow. This American firm has about 200 selling depots (warehouses, branches, and commission agents). Other foreign firms and a number of small and large factories in southern Russia are active in the trade

Especially noteworthy is the sale of agricultural machinery and implements by Danish and German firms that export butter from Siberia to western Europe. Their close connection with the peasants makes it possible for them to form an organization for the sale of agricultural machinery.

GRAIN-ELEVATOR SYSTEM PROJECTED.

According to the semiofficial Priamurskoi Vedomosti at Khabarofsk, the Department of Trade and Manufactures has prepared a plan to erect nine large elevators and equip additional storehouses sufficient for 238,400 tons of grain. This extension of the Russian elevator system as a means of storing grain and organizing the grain trade, in which the Government bank has taken the initiative, is attracting a great deal of interest in Siberia.

It is planned to build elevators in Novo-Nicolaiefsk, Barnaul, Irkutsk, and Station Issic-Kul on the Trans-Siberian Railway. The elevator at the last-named place is already in course of construction on a cooperative basis. The Department of Agriculture and Land Organization proposes to build a further line of elevators of smaller capacity in western Siberia, where grain in payment of loans is to be stored. This is but an extension of the line of elevators projected by chambers of commerce and municipalities of the Caucasus, Pri-Wisla, and South Russian Provinces. The project for the improvement of the port of Vladivostok, in the Maritime Province of the Russian Far East, also calls for a large elevator in which to store Manchurian beans, etc. This extension of the Russian elevator system in Siberia will create a network over the Empire, increase the loans on grain in store, and open a new era in the development of trade and industrial progress of Asiatic Russia.

RICH NATURAL RESOURCES AID ECONOMIC DEVELOPMENTS.

There are other industries worth noting in western Siberia. Industrial centers are developing where a decade ago were seen only collections of small houses. They are found where the railway crosses the principal waterways. Distilling, milling, skin curing, leather making, and such other industries as depend on cheap raw material are beginning, although, as compared with other countries, they are still in their infancy. There are towns of 20,000 to 50,000, and the population is steadily increasing.

In the Beryosoff district there is one of the greatest coal fields in the Russian Empire. Although not so plentiful as in the Baikal district, in northeastern Siberia, and the Russian Far East, the Altai Mountains are rich in gold and silver. Copper and lead also exist in the Altai district, and there are rich mineral areas along the Ob and Irtish Rivers. The forests of western Siberia could supply the European market for a long time and are only waiting for improved ways of communication, which are now under consideration.

The dry lands of northern Siberia have been considered for a long time as unproductive, but a Government agronomist gives it as his opinion, based on explorations and experiments, that the manufacture of an excellent cheese, similar and equal to the best

Swiss, could be developed in this region, as the conditions and vegetation are similar to those of Switzerland.

The Yenisei Government of central Siberia shows economic development, and while it is not likely to affect the import or export trade for some time, with the arrival of more immigrants and improved ways of communication this region must be considered in its development along the line of agriculture, the rearing of live stock, mining, etc. Its population at present is small, its culture primitive, and it has few skilled workmen and little capital, but it has a town of 50,000 inhabitants, Krasnoyarsk, which is growing in importance, and its development depends only on better transport facilities and further immigration into central Siberia, which is receiving consideration.

TRANSBAIKAL PROVINCE.

The Transbaikal Province covers an area of 236,922 square miles and is, therefore, larger than Germany, Austria, France, and Italy combined. On account of its size, it is hard to say what its climatic or soil conditions are, or the occupation of its inhabitants. In one part wild apples and apricots grow, while in another is eternal frozen ground.

Agriculture in this Province is not of such importance as in the Amur Province. Cattle raising and horse breeding are the leading industries at present, but it is contended that when the Province is opened up and better populated, it will not only produce cereals for its local needs, but will be able to export.

In many places in this Province a variety of grass is found, locally called vostretz, which grows wild and toward the cold season rolls its leaves together in a pipelike manner and remains standing the whole winter as a natural hay. Winter pasturage in such places is sometimes better than during the summer season, and cattle thrive upon it.

The Province is well forested with the exception of the southern part. Larch, pine, fir, spruce, poplar, aspen, and cedar grow in all parts, and in many places there are large stands of first-class pine. Larch and pine are the species mostly used, larch for firewood and pine for building purposes. Lumbering does not exist to any commercial extent.

POPULATION—LAND OWNERSHIP.

The population is not very dense, the official figures for 1911 showing in this vast area a total of 940,796, of which 505,608 are males and 435,188 are females. The population is divided as follows: Russians, 70 per cent; Buriats, 20 per cent; Tunguses, 5 per cent; Jews, 1½ per cent; others, 3½ per cent. The population is concentrated in the center of the Province along the Rivers Shilka, Ingoda, Selenga, Chikoi, and Ilka. Very few live in the northern part, on account of the severe climatic conditions and an almost total absence of roads. Moreover, a great part of the northern lands are allotted to Amur Cossacks and are therefore closed to private settlement.

About 70 per cent of the area is empty land, only 45,360,000 acres being occupied, while 108,000,000 acres are idle. The agricultural

area in this Province might be subdivided into three parts: The western section—Government lands; the eastern section—land under control of the Imperial Cabinet; and settled land strips along the rivers and around the population centers. Cossack lands are intermixed with all these groups.

The peasants do not own the land, but it is in their possession pending final arrangements. Mining rights throughout the Province belong to the Government and the Imperial Cabinet. There are 54,000,000 acres of Government land, 32,000,000 acres of Cossack lands, 64,800,000 acres of cabinet lands, and 189,000 acres belonging to towns and the church.

According to actual use, the land is subdivided as follows: Cossacks, 14,404,500 acres; peasants, 4,916,700 acres; native tribes, 18,322,200 acres; cities, 148,500 acres; church, 18,900 acres; cabinet land, 7,641,000 acres. About 42 per cent of the land area of the Province is composed of forests and unsuitable lands, 35 per cent is pasturage, 13 per cent is agricultural land, and 10 per cent hay lands.

AGRICULTURE.

The majority of the inhabitants engage in agriculture, raising spring wheat, corn, oats, barley, and buckwheat, and in a small number of places millet, flax, and hemp. Potatoes are grown everywhere in small quantities for domestic use only. Everyone is free to use as much land as he cares to, and therefore there is no obligatory rotation of crops. However, rotation is followed, and the lands are allowed to lie fallow frequently. As a rule no fertilizer is used, but in a few places the use of animal manure began a few years ago.

The amount of seed used per acre and the average and largest crops per acre in 1910 and 1911 are shown by the following table:

Crop.	Seed sown.	Average harvest.	Largest harvest per acre.
	Pounds.	*Pounds.*	*Pounds.*
Autumn rye	80- 240	843	2,123
Spring rye	67- 227	642	2,373
Wheat	67- 227	560	2,160
Oats	80- 208	573	2,293
Barley	67- 227	629	3,200
Buckwheat	40- 174	493	1,333
Potatoes	400-2,680	5,620	26,667

Sowing commences the first of May and ends the latter part of May or first of June. Late frosts in the spring and early frosts in the autumn, together with floods and winds, are drawbacks to the development of agriculture in the Transbaikal Province.

There are vegetable gardens all over the Province, but gardening is done only on a small scale. While the high prices of vegetables should encourage the development of this culture, up to the present time little attention has been paid to it and the methods employed are crude.

CATTLE RAISING, HORSE BREEDING, ETC.

Cattle raising, horse breeding, etc., are important and necessary occupations of all the inhabitants of the country. The natives, part of whom are still nomads, are little occupied with agriculture, and

animal raising is their chief occupation. The number of domestic animals in the Transbaikal Province in 1911 was 2,858,858, divided as follows: Horses, 570,630; cattle, 983,530; sheep, 1,058,817; goats, 114,105; hogs, 120,784; camels, 10,992.

The cattle and horses are mostly of local origin, and attempts to introduce better-blooded stock have not been satisfactory. They are small and endure the rough climate and rough handling well. There are a number of fast pacers among the horses. The average price of an ordinary horse is $25.75. The cows are also small and give little milk. Their average price is $18.03. Bullocks cost from $51.50 to $103 per pair.

The sheep are large and give good meat and skins; their average price is $2.58. Goats are kept by the natives in large numbers and are worth $1.80 each. Pigs are of a very ordinary breed, the average price being $7.73. In recent years the breed has been improved by imported swine. The camels are strong and have great endurance, a pair of them being able to carry 21 to 25 hundredweight. Their average price is $51.50.

FISHING AND HUNTING—INDUSTRIES.

Fishing is carried on throughout the Province, but in an industrial way only in Lake Baikal, in the Selenga, Shilka, and Amur Rivers, and in Lakes Erivinska, Shaksha, and Tassa, situated in the Bitim Highlands. The principal fish are: Omul, a variety of salmon, which is apparently found only in Lake Baikal and is the most important; roach; *salmo thymallus;* pike; carp; burbot; silurus; tench; and sturgeon.

Hunting takes an important place among the sources of revenue of the population, especially of the natives in the northern part of the Province. The most important animals are sable, squirrel, and tarabagan, a kind of marmot. Sable from the northern part of the Province is the most valuable animal, but squirrels and tarabagan, which are killed in millions, bring the largest income to hunters. About 3,000,000 squirrels are killed each year for their fur, the prices of which are increasing at the present time. Several years ago squirrel skins brought from 5 to 8 cents each, whereas now the price is from 25 to 40 and even 50 cents apiece.

The industries in this Province are small, but on the increase, money and labor both being very dear. Altogether there are 324 industrial undertakings, employing 2,957 laborers, and their combined turnover is $4,635,000.

RICH MINERAL DEPOSITS SLIGHTLY DEVELOPED.

The Transbaikal Province is rich in many deposits of metals and minerals; gold, iron, silver, lead, cinnabar, manganese, precious stones, coal, salt, asbestos, mica, wolfram, and naphtha are known to exist in working quantities.

Gold mining has already attained a certain development, and the amount of gold mined per annum is about 131,687 ounces troy, valued at $2,500,000, but the absence of good roads and the high cost of labor prevent this industry from growing, and many of the mines have closed down. Many of the mines are difficult to work on account of

the ground being frozen throughout the year. In some places where the percentage of gold is rich enough, open wood fires are employed to thaw the ground. This method is expensive, not only because such fires can thaw only a small space, but also on account of the high price of fuel, which costs $9 to $10 per 343 cubic feet. At the present time Belgian engineers are making experiments in the Bargusin district in thawing the ground on the principle of steam heating.

Formerly the Government silver-lead mines of Nerchinsk were of importance, but with the abolition of forced labor they gradually diminished their output and in 1906 were closed.

TRADE OF TRANSBAIKALIA.

The trade of Transbaikalia consists principally of handling its raw products and distributing goods imported from Russia and abroad. The trade is concentrated in towns and large villages, the principal centers being Chita, Streiensk, Verchniudinsk, Troitskosavsk, Nerchinsk, Petrofsky Zavod, Berchinsky Zavod, Aksha, and Borsia. There is no information available regarding the turnover of the trade of the Province, but some idea can be formed by the fact that 10,932 trading licenses, amounting to $110,870, were issued in 1911. Twelve fairs are held annually, with a turnover of about $700,000.

The export as well as the import trade is carried on via Troitskosavsk (Kiachta), Station Manchuria (Manchouli), Streiensk, Aksha, and other points. In 1910 the following Russian goods were exported via Kiachta: Sugar, $34,283; flour, $35,612; leather manufactures, $154,921; piece goods, $14,318; matches, $3,103; tobacco, etc., $13,808; other articles, $4,816; a total of $260,861. Skins and furs to the value of $23,490 were exported to Germany, and exports of sugar ($38,513), matches ($773), and piece goods ($190,523) sent out by Chinese brought the total value of exports to $514,160.

The following goods were imported via Kiachta:

Articles.	Value.	Articles.	Value.	Articles.	Value.
Chinese:		Mongolian—Contd.		Mongolian—Con'd.	
Tea	$37,520	Cattle	$419,169	Sheepskin	$143,812
Other	319	Hides	92,532	Other	6,315
Total	37,839	Wool—		Total	2,002,415
Mongolian:		Sheep	255,856		
Butter	38,215	Camel	65,751		
Tallow	15,186	Skins	952,112	Grand total	2,040,254
		Casings, sheep	8,724		
		Horsehair	4,743		

In addition, the Chinese imported into the Transbaikal, Irkutsk, and other Provinces $261,824 worth of tea, $5,526 worth of wool, $168,728 worth of skins, and $43,236 worth of other products, a total of $479,314.

YAKUTSK PROVINCE.

The Yakutsk Province is hardly known. It covers an enormous territory, bounded on the north by the Arctic Ocean, on the east by the Kamchatka and Maritime Provinces, on the west by the Yenisei Province, and on the south by the Irkutsk, Transbaikal, and Amur Provinces. Its frontier is 7,334 miles long, of which 2,667 miles is

seacoast. Its area is about 1,535,463 square miles, or one-sixth of the whole of Russia and one-third of the Russian Asiatic possessions.

On the whole it is a wilderness or desert hardly accessible to human beings. Only about 1,695,600 acres are known to some extent. About 72 per cent of the Province is covered with forests. Yakutsk is poor in roads, and the transportation of goods and traveling by the inhabitants is done by water. Up to a few years ago its seacoast was regarded as inaccessible for navigation on account of ice, but the expeditions of 1911 and 1912 disproved this idea, and at present the Russian Volunteer Fleet is organizing a regular line of steamers between Vladivostok and the mouth of the Kolima River. The Province is divided into the following administrative districts: Verkhoiansk, with an area of 413,482 square miles; Viliuisk, 387,700 square miles; Kolimsk, 265.710 square miles; Olekminsk, 147,477 square miles; Yakutsk, 316,031 square miles.

CLIMATE, FLORA, AND FAUNA.

The Province being shut off by high mountains from the influence of southern winds has the coldest climate of all populated countries. The winters are very cold and last nine months and the summer is short and, as a rule, resembles a cold spring more than a real summer. There is practically no spring nor autumn. The rivers become free of ice only in the middle of June and are frozen again by the middle of October.

The forests consist of larch intermixed with fir, pine, and cedar. In the valleys and near the lakes are found willow, birch, aspen, and poplar. The entire shore of the Arctic Ocean is occupied by marshy plains, the tundra, being covered with typical tundra vegetation, such as moss, lichen, various kinds of reed grass, etc., while here and there grow a few dwarf larch and willow trees. The tundra is rich in cloud berry, which constitutes about the only addition to the animal food of the inhabitants.

Recent investigation indicates that when tundra loses its marshy character and becomes dry, its plants will greatly resemble the alpine flora. This remark refers not only to the seacoast of the Yakutsk Province, but to the entire Polar shores of Siberia. There are indications that when the population of this region becomes sufficiently dense and the ways of communication of the extreme north with the outside world by land or by sea are properly organized, many places situated between the tundra belt proper and the forest belt will present good opportunities for the manufacturing of cheese similar to Swiss.

In contrast to the flora, the fauna of the Province is exceedingly rich and forms one of the main sources of income for the local inhabitants. Along the seacoast and on the islands there are various kinds of sea animals, chief among which are whale, sea dog, walrus, and polar bear. Large numbers of animals and birds are found in the forests and swamps, and the waters are rich in fish. Hunting is the principal occupation of the inhabitants. The principal species of animals having a commercial value are sable, squirrel, ermine, bear, fox, hare, otter, lynx, beaver, and the northern deer. Among the birds are duck, geese, swan, sea gull, and diver. The fresh-water fish include bass, common gremille, sturgeon, carp, grayling, gwiniad, pike, burbot, and dace.

POPULATION—AGRICULTURE.

The population of the Province consists principally of various native tribes (about 91.4 per cent) and 7.6 per cent Russians. The rest are Jews, Poles, Germans, etc. Among the natives are 235,600 Yakuts, which form about 86 per cent of the population, the balance being 10,000 Tungus, 1,947 Lamists, 1,857 Chukchees, and 490 Yukaguirs, all of whom are of Mongolian origin. The Russian population consists of the descendants of Cossacks (the conquerors of the country), tradesmen, peasants, and exiles, making a total of 274,442.

Formerly the Province was regarded as unfit for agriculture, but recent investigations have proved otherwise. In 1912 three expeditions of the Colonization Department worked in the Province, investigating its capacity as a field for colonization, and their reports have established the fact that agriculture is not only possible but can be carried on with profit.

At present agriculture is pursued in a small way, and wheat forms an important part of the diet of the population, including all of the natives. All Yakuts cultivate it. The period for ripening grain is 71 days for barley, 92 days for spring corn, 82 days for oats, and 76 days for wheat. Agricultural machinery has begun to find a small market in this Province.

Gardening in the Province is carried on in a small way even in regions north of the agricultural belt. It is pursued in the Sredni-Kolimsk, Kolimsk, and Verkhoiansk districts. One of the reasons for the limited amount of gardening is the fact that during the short summer all the inhabitants are occupied in fishing.

ANIMAL RAISING—HUNTING.

Animal raising represents one of the most important occupations of the inhabitants of the Province, especially the natives, many of whom are nomads. Owing to the severity of the winters, but mainly on account of bad methods of handling and feeding the animals, neither the number nor quality is as it should be. In 1911 the number of animals was 486,816, divided as follows: Horses, 113,314; cattle, 333,851; sheep, 140; pigs, 638; deer, 37,283; sleigh dogs, 1,590. About 65 per cent of these animals are owned in the Yakutsk district and about 20 per cent in the Viliuisk district. About 80 per cent of the deer are in the Verkhoiansk district. About 95 per cent of all the animals are in the hands of the natives and only 5 per cent are held by Russians.

Hunting in the Province is diminishing yearly; the reckless slaughter of the animals is driving them farther and farther into the wilderness. In the Verkhoiansk and Kolimsk districts hunting and fishing form almost the only sources of income for the wandering native nomads. In other places in the Province it has lost its former importance. The furs are sold to local traveling merchants. Yakutsk is the center of the fur trade of the Province, and it is only in the past few years that a part of the furs from the Kolima district have been sold to the United States via Anadir and Chukotsk. Furs are the chief article of export.

FISHING—TIMBERING—SALT MINING.

Being rich in rivers and lakes, the Province has excellent fishing facilities. In the Kolima district and partly in that of Verkhoiansk fishing forms one of the most important sources of revenue of the population, while in other parts of the country it is only auxiliary.

Fishing is carried on commercially on the Lena River and its tributaries and on the seacoast. The principal fish are nelma, moksun, *salmo thymallus*, sturgeon, herring, gwiniad, pike, etc. The fish are sold in Yakutsk and from there go to the mines in Irkutsk Province.

Commercial timbering is carried on in Yakutsk Province on only a small scale. About 17,000 logs and some 26,800 cords of firewood are annually rafted down the Lena, Yana, and Kolima Rivers. Regardless of the abundance of forests, prices for timber are very high, owing to the lack of laborers and the high wages paid.

The Province is rich in salt deposits, especially in the Viliuisk district. The main deposits are at the Baginsky and Kempenda springs, situated near the rivers of the same names. At present the output is rather small, only about 1,000 tons per annum, and is expensive, owing to poor transportation, but this industry has every chance to grow, as there are no other known salt deposits in the entire Russian Far East, and the growing fishing industry and local consumption is supplied partly from European Russian and partly from abroad.

INDUSTRIES AND TRADE.

The hand industries of the Province are of little commercial importance, and only supply local needs. Only among the native Yakuts are there workers in iron, silver, and bone. The iron is obtained locally in the most primitive way. Boneware is made out of mammoth bones and is sold throughout Siberia. The Yakuts also make carpets out of various kinds of skins. There are only a few manufacturing plants in the Province handling local raw products.

The exports of the Province are fur, mammoth bones, cattle and horses, butter, meat, hides, and fish, which find their principal market in the mining places of the Irkutsk Province. The annual exports amount to about $360,500.

The imports consist of piece goods, provisions, wine, and alcohol, amounting to $618,000. These goods are imported during the summer and the main route of transportation is the Lena River, except for tea, which, as a rule, is brought by steamers as far as the village Nelkan via Aian and is rafted down the Maya and Aldan Rivers to Yakutsk.

There are two annual fairs held in the Province, one in the summer from July 10 to August 1, and the other from November 1 to January 1.

The turnover of the summer fair amounts to $575,000, of which $450,000 represents trade in manufactured goods, provisions, etc., and $125,000 the sales of furs, mammoth bones, cattle, etc. The winter fair is of lesser importance and is patronized only by the surrounding inhabitants. The turnover amounts to about $325,000.

SAKHALIN PROVINCE.

The Russian Province of Sakhalin at present consists of only about 15,317 square miles in the northern part of the island of that name. The southern part of the island has belonged to Japan since 1905.

The island is separated from the mainland by the Tartar Straits, which are in places about 100 miles wide, but the distance between Capes Pogobi and Lasareff is only about 20 miles. Only the western shores have safe harbors and anchorages, the eastern shores being shallow, and vessels are compelled to anchor some distance out.

This narrow island is influenced by two cold currents, one from the northeast of the Okhotsk Sea, which runs southwest and follows the whole west shore of the island, and another from the northwest part of the same sea, which passes the Tartar Straits and flows into the Japan Sea. In this way the island is surrounded by cold currents, and the north and south prevailing winds, blowing from these currents, make the winters long and severe and the summers short and cold.

POPULATION—AGRICULTURE—MINING.

The Russian population of Sakhalin is composed, with only a few exceptions, of members and descendants of the old forced inhabitants. Since the Russo-Japanese War, during which the exiles were set free and allowed either to remain on the island or leave it, the population has diminished greatly. At present the island is populated by about 4,000 Russians, living in 42 settlements. No fresh inflow of newcomers can be noticed. The total population is about 8,600, and even the number of natives is diminishing.

Sakhalin is more of a mining than an agricultural country, but in some places spring corn is cultivated. Grain and vegetables seldom ripen before the first frosts, as the summer is too short and cold.

The chief mineral of the island is coal. Deposits exist in all parts of the island, the best being on the western side, about 66 miles north of the fiftieth parallel, in the region called Mgatchi and Dué. Coal mining is disorganized at present, the mines barely existing with the minimum production. The great drawback to coal mining is the absence of a proper shipping port, loading of coal being expensive and unsafe.

In 1912 the question of the construction of a properly equipped port on the island was taken up with great earnestness. The committee appointed to investigate the question decided that the construction of a good port was a pressing necessity and selected Alexandrovsk, the capital of the Province, as the most desirable place to build it. The plans have been approved, and there is reason to believe that the port will be constructed at an approximate cost of $2,500,000.

Naphtha is found in all parts of the island. In the northern part, at Urkt Bay and near Chaivinsky Bay, many outcrops and even lakes of decomposed naphtha were discovered many years ago, but up to the present no fields have been found giving commercial quantities. Several investigating parties are boring for oil on the island.

FISHING—TIMBERING—HUNTING.

Commercial fishing in the waters surrounding the island is developing rapidly. The chief fish are herring and salmon, which each year make regular runs along the shores and fresh waters of the island. Up to the last few years fishing was concentrated on the northern shores, practically in the estuary and in waters affected by the fresh water of the Amur River, but in 1911 and 1912 the fishing gradually

moved toward the eastern side of the island, and fishing is being carried on successfully in and around Nye and Chaivinsky Bays.

Nine-tenths of the island is covered with forests. The principal species are spruce, fir, maple, and birch. Near the mouth of the Pilevo River a commercial sawmill was established in 1911, with the intention of exporting lumber, but poor shipping facilities made the cost of timber too high, and at present the mill is working for the local market. There is a Government sawmill in Alexandrovsk which saws 10,000 to 15,000 logs per annum for local use. Timbering on a larger scale is a question for the future, as only the local market is being served at present.

The island is rich in animals and birds. Hunting is carried on principally by natives, only a small proportion of Russians participating therein. The principal animals are sable, squirrel, ermine, deer, musk ox, hare, lynx, bear, fox, sea dog, and otter.

TRADE AND INDUSTRIES.

The trade of the Province is small. The yearly import is about 2,690 tons of various goods and the exports from the island consist mostly of fish, caviar, berries, and 150 to 175 head of cattle. There are only two industrial undertakings on the island—a vodka distillery and a beer brewery.

KAMCHATKA PROVINCE.

Kamchatka as an independent Province was formed only in 1909. Formerly it was a part of the Maritime Province. It consists of a narrow strip of land along the northwestern shores of the Okhotsk Sea north of the Uda River, the Kamchatka Peninsula, Chukotsk Land, and islands of Bering Sea.

Great interest is being taken in this region by the Russian Far East Hydrographical Expedition, and at present (July, 1913) its steamship *Okhotsk* has left Vladivostok for the Okhotsk Sea, to continue the study and survey of northern waters. The expedition will work in the Tausk, Penjinsk, and Ghijinsk Bays, Kamchatka, and will not return to Vladivostok before the middle of October or first of November.

It has recently been reported that a deep passage has been found around the southern point of Kamchatka Peninsula, between Lopatka Cape and the North Kurile Islands, which will shorten the route around this point for steamers at least 24 to 30 hours. A recharting of this route will greatly aid navigation in these waters, which is increasing owing to the great development of the fishing and canning industry along this coast.

PRINCIPAL TOWNS SMALL.

Petropavlosk, the capital of the Province, is situated on Avachinsk Bay, on the northeastern side of the peninsula. It was founded as a small fortress in 1740, when the Russians first appeared in the country.

It is only in recent years, since becoming an administrative center, that it has obtained the appearance of a town, and at present the population is about 1,000. During the summer the town is visited

regularly by steamers of the Russian Volunteer Fleet, and in winter passengers, freight, and mail are carried by dog and horse teams via Irkutsk and Yakutsk, the journey taking about three months. Wireless communication was established with Nicolaiefsk-on-Amur in 1910.

Other places of importance in Kamchatka are Okhotsk, situated on the northwest shore of the Okhotsk Sea, at the mouth of the Okhota River, and Ghijiga, at the north end of the Okhotsk Sea, at the mouth of the river of the same name. Okhotsk was established in 1647 and up to the beginning of the nineteenth century was the starting point of Russian activity in the extreme northeast of Asia. Established as a fortress, the town is poorly situated in almost every respect. The surrounding country is unhealthy. Fresh water must be carried a distance of 3 miles. The seashores are shallow and anchorage poor. Tides are high and strong, and the ice coming from Nenginsk Bay floats around as late as the end of July, causing heavy fogs. Okhotsk is now a small settlement of about 400 inhabitants.

Ghijiga is also badly situated. It was established in 1753 as a fortress or block house, to suppress the Karyaks. The shore is low and ships have to anchor 20 to 25 miles from the mouth of the river. The inhabitants are composed of Karyaks, Lamuts, Tunguses, and Russians. While the number of natives is not known, there are about 500 Russians living in and about Ghijiga.

Ola is an important village situated on Tausk Bay, which has many good and safe landing places. The importance of this place was created by the opening of a trading road from Ola to Kolima. This pack trail passes through dry country, with no swamps or high hills, and goods can be transported more than 400 miles in 15 to 20 days, at a cost of $1.50 per 36.11 pounds. In summer, pack horses are used for transportation, and in winter, dogs and deer. At present in and around Ola is concentrated a population of about 5,000, consisting mostly of Tunguses.

Ayan, also one of the old Russian settlements, is situated in a small and well-sheltered bay, and is the principal place for the transit of tea into the country.

Little further information is obtainable about this large Province. On account of the severe climatic conditions, agriculture is hardly possible, and the main sources of life of the inhabitants are fishing, hunting, and some mining, which is beginning in the Province. The Government mining engineer Ovodenko, who was commissioned to examine Kamchatka, reports the discovery of gold fields and deposits of other useful minerals. He found indications, also, of platinum, iridium, palladium, and osmium. He also reports good pearl banks on the Golovinsky River, where the natives obtain a large number of pearls, which are sold to Americans for $1.50 to $4 each. A number of old prospecting diggings, probably of American or Japanese origin, were also found.

FISHERIES HANDICAPPED BY TRANSPORTATION COSTS.

The development of fisheries in Kamchatkan waters has attracted attention in Russian Europe and elsewhere. The Fruit, Tea, Wine, and Fish Exchange of St. Petersburg is reported to have recently

presented a petition to the Railway Department for cheapening transportation costs for Kamchatka fish to Russian Europe. The exchange subdivides the Pacific fisheries geographically and economically into two parts—that of the Primorski (Maritime Province), and that of Okhotsk-Kamchatka. It points out that the former region is in a better position, and has better connections by rail, river, and sea, while the latter region is connected with the Maritime Province by only a few steamer voyages during the short season of navigation, and for the balance of the year is cut off from the world.

Comparatively speaking, by reason of the large population of the Primorski, which is growing yearly through the influx of new colonists, that Province can supply its fisheries with local labor, materials, and supplies, while the Okhotsk-Kamchatka region imports its labor and materials from the Primorski. Besides fishing, the Primorski is also developing gold mining, timbering, agriculture, and various manufacturing industries, whereas in Kamchatka, fishing and deep-water hunting are the only dependable resources, and the development of these industries is of great significance. On account of such unfavorable circumstances, the Okhotsk fishing industry has to bear undue transportation expenses, such as 7½ cents freight per pood (36.112 pounds), and 5 cents per pood for handling, loading, and discharging. Taking the working capacity of a man as 360 poods (about 6 tons) gross of fish products would make the transportation cost per pood of fish about as follows: Transportation of labor (up to 1,585 miles, at $0.026 per mile), $0.0227; transportation of foodstuffs and supplies for men (four months at 5 pounds per day per man), $0.0051; transportation of salt (allowing 3 pounds of salt for every pood of fish products), $0.0258; transportation of barrels (taking the weight of packing as 6 pounds for every 40 pounds of prepared product), $0.0211; transportation of prepared fish products from Okhotsk-Kamchatka region to ports in Primorski, including loading and discharging expenses, $0.1287; a total of $0.2034.

To this must be added that the average run of industrial fish lasts from 15 to 20 days and the work of preparing the fish takes at the maximum only two months. Depending on the sailing of the boats of the Russian Volunteer Fleet, however, the fishermen are obliged to send out their laborers in the latter part of May and keep them till the return autumn voyage, about the end of September. Counting on possible delays, they are obliged to keep the men four months.

This is intended to show that the cost of keeping workmen, who are useless for one and one-half months, makes the Okhotsk-Kamchatka fish products dearer. The wage of $20 per month is in reality $30, which at the working capacity of 360 poods per man, adds $0.0855 per pood of fish, making the total production cost $0.2889 per pood, delivered at Nicolaiefsk-on-Amur or Vladivostok, without counting the additional transportation expenses of fishing utensils and building materials, marine insurance, etc.

For these reasons, and for the purpose of encouraging this industry and the further population of this region, the Exchange requests a cheapening of the railway tariff as against Amur fish of 20 cents per pood on through bills of lading via the boats of the Russian Volunteer Fleet. As the economic influence of the Japanese is strong in these waters, it is thought that such a move would be beneficial for

the development of this region, and should be welcomed, considering the diminishing fish supply in European Russia.

AMUR PROVINCE.

In the character of its soil the Amur Province is similar to the northern Provinces of Russian Europe, such as St. Petersburg, Novgorod, and Pskov. Its mineral wealth is large and important, there being deposits of gold, silver-zinc ore, iron, copper, marble, white and green clay suitable for making porcelain, antimony, and other minerals. There are also coal deposits and numerous mineral springs, which have, however, been little studied.

The climate is continental, with long cold winters and hot summers, but on the whole is suitable for agriculture. The flora is varied with representatives of southern and northern climates intermixed, so that one often finds a fir covered with grape vine. Coniferous species predominate in the north, such as fir, spruce, Siberian cedar, pine, and larch, while in the south are found cork trees, acacias, walnut, oak, ash, poplar, birch, elm, aspen, etc.

Generally speaking, the forests of the Province have been studied more from the scientific than from the commercial point of view. The ownership of the forests is divided between the Government, which is the largest holder, the Amur cossacks and the peasants. The Government forests contain 29,839,750 acres.

For administrative purposes the Province is divided as follows: Amur district, Amur Cossacks district, Zeia mining and police district, Burea mining and police district, Dzhalnda mining district, Lower Selemja mining district, and the Hingan and Sutar mining district. Besides these the third and fourth police stations of the western part of the Amur Railroad are included in the Province.

The population of the Amur Province is chiefly concentrated along the Amur, and middle and lower Zeia and Burea Rivers and their tributaries. The total population in 1911 was as follows:

Nationality.	Male.	Female.	Total.
Russian	138,084	113,167	251,251
European	201	45	246
Japanese	537	283	820
Korean	1,609	465	2,074
Chinese	31,809	63	31,872
Total	172,240	114,023	286,263

AGRICULTURE THE PRINCIPAL OCCUPATION.

The greatest part of the population belongs to the agricultural class, and the development of agriculture is the chief element in the well-being of the Province, its climate and soil conditions being suitable for this purpose. The allotments are large, and there is an abundance of unoccupied land.

The area of land owned by peasant communities, Cossacks, settlers, and others amounts to 27,122,723 acres and is subdivided as follows: Temporarily used by Amur peasant communities, not including lands allotted by the Colonization Department, 2,371,367 acres; Amur Cossacks, 15,619,500 acres; projected to be given to the town of Bla-

goveshtchensk, 58,555 acres; Zeia-Pristan lands, in two sections, 37,530 acres; allotted to settlers by the Department of Domain, 8,822,023 acres; other, 213,748 acres. Of this area, 649,574 acres were under cultivation in 1911.

Wheat is the most important cereal cultivated, followed by oats, buckwheat, millet, and barley. Owing to the cold, snowless winters, winter grain is rarely cultivated. As a rule field work starts during the latter part of April and ends in September. Potato culture is of great importance, as that vegetable forms the chief food of the peasants.

The extent of cultivation is shown in the following table:

Crop.	Amount sown.	Harvest.	Crop.	Amount sown.	Harvest.
	Tons.	*Tons.*		*Tons.*	*Tons.*
Wheat	19,163	96,197	Buckwheat	359	1,648
Rye	1,027	4,556	Millet	124	1,285
Oats	20,080	96,325	Potatoes	3,800	26,827
Barley	184	824			

The wages paid for farm labor in general are high, owing to the high cost of the necessaries of life. The colonists during the first years of their arrival form the local farm hands, together with Chinese, who arrive in large numbers in the spring to work on the farms. The average wages paid to farm laborers in the Amur Province during 1911 can be seen from the following table:

Period employed.	Without board.	With board.
Male, engaged for 1 year	$150.00–$250.00	$100.00–$192.00
Female, engaged for 1 year	115.00– 225.00	65.00– 100.00
Male:		
Apr. 1 to Oct. 1	90.00– 100.00	70.00– 90.00
Oct. 1 to Apr. 1	40.00– 60.00	30.00– 40.00
Female:		
Apr. 1 to Oct. 1	65.00– 90.00	50.00– 70.00
Oct. 1 to Apr. 1	35.00– 50.00	25.00– 40.00
Daily wages during sowing season:		
Laborer—		
With horse	2.00– 2.25	1.00– 1.75
Without horse	.88– 1.35	.50– 1.15
Female	.50– 1.00	.38– .65
Daily wages during haying season:		
Laborer—		
With horse	2.00– 2.25	1.00– 1.75
Without horse	.88– 1.40	.50– 1.10
Female	.50– .85	.38– .65
Daily wages during harvest:		
Laborer—		
With horse	2.00– 2.13	.75– 1.75
Without horse	.88– 1.35	.50– 1.10
Female	.63– 1.00	.50– .75
Rate per acre:		
Plowing—		
Spring	2.22– 4.26	1.87– 2.22
Summer	2.04– 3.75	1.67– 2.04
Autumn	2.22– 3.33	1.67– 2.22
Harrowing—		
Spring	.93– 1.30	.74– 1.11
Summer	1.11– 1.67	1.02– 1.48
Autumn	.93– 1.48	.74– 1.30
Sowing	2.03– 3.52	1.67– 2.78
Harvesting	3.75– 6.85	2.96– 5.92

The Amur Province is the best market for agricultural machinery in the Russian Far East, the machinery being sold by private firms

and by the depots of the Colonization Department on a credit basis. During 1911 the Government Commissary Department, the largest buyer of grain, purchased 1,057 tons of rye, costing $27,536; 20,501 tons of wheat, costing $524,059; and 17 tons of buckwheat, costing $278. The average price paid by the Commissary Department for rye was $0.6356 per pood of 36.112 pounds, and for wheat $0.5098. More than 36,000 tons of grain grown in the Amur Province was put on the market. The following table shows the grain consumed and the flour produced by the Blagoveshtchensk flour mills:

Sources and destinations.	Wheat.	Rye.
Grain purchases from:	*Tons.*	*Tons.*
Amur Province	37,290	1,310
Manchuria	63,516	.....
Total	100,806	1,310
Flour produced for:		
Blagoveshtchensk market	28,231	401
Mining districts	8,564	84
Zeia Pristan	6,246	56
Commissary Department	6,493	623
Other markets	19,876	140
Total	69,410	1,304

Three hundred and five tons of wheat flour were imported into Blagoveshtchensk from Odessa and other places, and 2,347 tons from Manchuria.

TIMBER INDUSTRY—ANIMAL RAISING.

Timbering in the Province is mostly in the hands of the peasants, and forms more or less of a side line to their other occupations. The timber is floated down the rivers in small lots to Blagoveshtchensk, Zeia Pristan, and other small stations on the Zeia and Burea Rivers, to the Amur Railroad, and to the mining camps, most of it being prepared in the form of firewood. There are no regular timbermen in the Province, and work is generally done by laborers who are little adapted to this kind of employment. There are 21 sawmills at present in the Province, of which 7 employ 138 men and handle 88,000 logs per annum.

In the Amur Province animal raising does not as yet form an independent industry, and is only a branch of the agricultural industry, consisting more of horse breeding than cattle raising. The horses are used for field work and for the transportation of goods. Cattle raising is growing very slowly, as it does not represent an important source of income to the inhabitants. The chief animal products are imported from Manchuria, Mongolia, and Transbaikalia. The local cattle are small and weak, and in only a few localities can good animals be found.

Sheep raising also is not of much importance, owing to the absence of sufficient dry pasturage. Pig raising is of more importance, but up to the present want of proper attention has retarded its development. The prices in Blagoveshtchensk are as follows: Cows of local breeding, $35 to $60; bulls, $40 to $60; Transbaikal horses, $50 to $100.

The number of domestic animals in the Amur Province in 1911 was 263,096, divided as follows: Horses, 111,943; cattle, 82,701; sheep, 12,841; hogs, 52,425; goats, 275; deer, 2,859; mules, 52.

FISHING AND HUNTING.

Fishing is carried on principally by the Cossacks and peasants of the villages along the Amur River and its tributaries. It is of importance as far as the diet of the population is concerned and has an influence on the economic well-being of the inhabitants, but nowhere in the Province is it on a commercial basis, and fish are not exported.

Fishing began with the arrival of settlers from the Astrakhan, Kuban, and Don Provinces, who were familiar with the industry in those regions. The principal fish are: Sturgeon, kaluga, *Salmo thymallus*, and keta, the latter reaching the boundaries of the Province by way of the Amur River from Nicolaiefsk.

There are good opportunities to create large fishing undertakings, which probably will be done when the population of the country increases and the inhabitants become more familiar with fishing methods.

Hunting is the chief occupation of the natives of the Province, but the Russians do not hunt much. The principal animals are sable, otter, ermine, squirrel, fox, bear, lynx, badger, raccoon, wild deer, moose, roe deer, wild boar, roebuck, musk deer, and tiger. The principal game birds are geese, duck, pheasant, grouse, and riabchik (hazel hen).

Furs are sold in the villages to small country storekeepers, the wholesale trade being concentrated in Blagoveshtchensk, Station Radde, and various fairs. Most of the furs are obtained in the Burea mining district. The number of animals and birds taken and the prices obtained in the Amur Province in 1911 are as follows:

Varieties.	Number.	Value.	Varieties.	Number.	Value.
Animals:			Birds:		
Squirrel	14,926	$3,076	Hazel hen	5,279	$780
Hare	1,752	282	Grouse	10,892	2,084
Sable	731	40,358	Woodcock	791	337
Skunk	3,526	1,355	Partridge	510	52
Fox	624	2,435			
Wolf	166	287	Total		3,253
Bear	104	1,421			
Wild goat	4,399	8,131			
Deer	212	3,209			
Wild boar	156	1,719			
Total		62,273			

APICULTURE—GARDENING—GOLD MINING.

Apiculture in the Amur Province is small, but is growing in importance yearly. It is concentrated along the Bela, Har, and Zavita Rivers, there being 92 villages engaged in apiculture on a commercial basis, with 2,757 beehives. During 1911, 44,345 pounds of honey and 4,434 pounds of wax were put on the market. The industry is almost entirely in the hands of the peasants. The climate and vegetation of the Province are very favorable for apiculture, and its slow growth is due to the fact that the inhabitants find other employment more profitable.

Gardening forms one of the most important occupations of the inhabitants, but, up to the present, vegetables have been raised only

to satisfy the needs of the local population. It could easily be developed on a larger scale in the vicinity of Blagoveshtchensk, but the competition of the Chinese, who raise vegetables in large quantities on the right bank of the Amur, is too strong. Cucumbers, cabbage, radishes, turnips, onions, carrots, beets, and potatoes are the principal vegetables raised.

Gold mining takes a leading place among the industries of the Province. The amount of gold obtained in 1912 was 104,507 troy ounces, valued at $1,750,000, of which 59,193 ounces were obtained in the Burea mining district. Out of a total of 129 mines registered in the Amur district, only 57, owned by 48 companies, were worked during 1912.

INDUSTRY AND TRADE.

The manufacturing industries of the Province are gradually increasing in importance. The most important enterprises are concentrated around Blagoveshtchensk, and at present these factories are working to supply the most pressing needs of the country. There are numerous opportunities for future development of industrial enterprises in the Province, but such growth is handicapped by the absence of capital and technical knowledge, as well as lack of skilled workmen, the high wages paid, and the absence of good roads.

In the following table is given the number of industrial enterprises in the Amur Province in 1911, their turnover, and the number of employees:

Enterprises.	Number.	Turnover.	Employees.	Enterprises.	Number.	Turnover.	Employees.
Tanneries	21	$184,468	162	Flour mills:			
Tallow works	5	5,150	34	Steam	45	$3,917,592	501
Fur factories	15	17,889	48	Water	92	99,410	169
Glue factories	2	1,803	6	Wind and horse	47	4,491	47
Sausage factories	8	137,787	25	Brickworks	38	66,751	415
Felt, boots, etc	9	11,845	44	Iron and brass works	3	327,025	400
Slaughterhouses	4	18,500	51	Machine shops	17	32,916	78
Casings	2	4,480	19	Printers	4	89,610	85
Soap works	4	14,003	13	Match	1	40,425	115
Distilleries	2	143,105	103	Blacksmiths	339	106,698	615
Distilleries, wood	10	37,786	47	Harness	17	32,445	61
Breweries	5	139,112	109	Carriages, carts, etc	28	37,311	102
Turpentine	1	7,725	3	Barrel	9	6,901	38
Rope	1	1,030	5	Paint	8	3,605	14
Sawmills	10	273,370	188	Confectioners	10	28,163	66
Cigarette factory	1	4,120	5	Hats and caps	2	6,695	5
Yeast	2	9,466	8	All other	18	28,283	47
Mineral water	11	50,182	48	Total	789	5,890,142	3,677

The industrial turnover of the Province is rather small compared with the opportunities represented by its size and natural resources.

Grain and furs are the chief exports, and agricultural machinery, metal ware, piece goods, etc., form the main imports. Trading is also handicapped by the absence of good roads. Blagoveshtchensk is the center of trade in the Province, and goods are imported from Russia in Europe, Germany, the United States, and China. The commercial turnover of the Province in 1911 amounted to $17,177,442, and the Government revenue from trading license was $49,814.

MARITIME PROVINCE.

In 1912 the commercial and industrial life of the Maritime (Primorski) Province was along the same lines as in 1911. Some weak firms went out of existence, and those which survived the hard times of the previous year are in a better position, and the situation is somewhat improved.

The Government, as a customer, has continued to play the most important rôle in local commerce and to a certain extent in industry. The construction of the eastern part of the Amur Railroad was in full swing during the year, and thousands of tons of material of various kinds, as well as foodstuffs, were used along the line. The Colonization Department constructed roads, bridges, etc., which added considerably to the growth of industrial life, but the largest customer was the Military Engineering Department, with its various so-called barrack commissions. They employed about 50,000 men, 90 per cent of whom were imported from European Russia for this special purpose.

CONTINUANCE OF RUSSIFICATION POLICY.

The policy of Russification of labor and material in Government work in the Far East was carried on with persistence. In regard to labor, this policy was extended so far as to exclude from Government work Koreans who had become Russian subjects. This policy was also applied to branches of commerce and industry connected with Government work. Brick manufacturers, timbermen, and others who made contracts with Government offices were obliged to prepare their wares exclusively with Russian labor. It applied also to contractors furnishing sand, stone, etc., and these articles when transported by water had to be shipped in vessels manned by Russians.

During 1912 the same policy was applied to contracts for building materials which were not manufactured in the Province, such as iron roofing, I beams, nails, glass, hardware, etc., regardless of the difference in prices between goods manufactured abroad and in Russia, which in many cases was 100 to 150 per cent.

The effect of this policy was more disturbing than could have been foreseen, and the prices of everything increased to such an extent that it was necessary to delay payments to contractors until further appropriations were made. In many cases it was necessary to carry indebtedness for eight months. There was a shortage of money in the market, where credit costs from 15 to 18 per cent per annum. High prices and the high cost of living prevailed to a greater extent than before.

PROVINCE NOT ESPECIALLY ADAPTED TO AGRICULTURE.

It seems to be generally conceded now that the Maritime Province will never grow enough cereals to supply the local demand of its civil population, not to mention supplying the military, and that it will therefore be necessary to draw grain supplies from outside.

The idea has long prevailed that this is an agricultural Province, yet more than two-thirds of its territory is made up of mountain ranges. Such lands suitable for agriculture as it contains—the Ussuri River valley, the country around Hanko Yake lowlands, Sko-

tova and the valley of the Miaha and Sitza Rivers. Suchan and Possiet highlands—with few exceptions are traversed by mountain streams which are almost dry in autumn and winter and thunder with waterfalls in the spring and summer. This region is also affected by cold, heavy, salty sea fogs from April to June, and often throughout July.

Russian colonists were at first much upset by these new conditions, to which they were unaccustomed in their own country. Their fields were often spoiled by floods, or so thoroughly soaked by fogs during the vegetation period that grain fermented or fungus formed which rendered it poisonous. They were unable to adapt themselves to these circumstances until Chinese and Koreans came to their assistance with a method of cultivation by a "platband" system, which allows the superfluous rain and fog water to escape and, by planting in rows, aids the sun and wind to dry the soil and the stalks of grain.

With the appearance of yellow labor, the number of acres under cultivation began to increase. The Asiatics, knowing where to place the field so that it would not be affected by water during fogs and rainy seasons, were of great assistance to the Russians for a time, after which the landholders turned over the entire field work to the Asiatics, gradually lost what little experience they had gained, and took up such new occupations as timbering, fishing, transportation of goods, and trade. The present Russification of the labor class has been a hard blow to this industry, and the effects will continue for some time, although there are no reasons for regarding agriculture as a main or predominating industry in this Province.

COLONIZATION WITH GOVERNMENT ASSISTANCE.

From the beginning of the Russian occupation of the territory now known as the Maritime Province, the Government has taken upon itself a great part of the expense connected with the transportation of colonists from European Russia and their housing and support until they obtained a foothold in the new country. Formerly the colonists drifted across Siberia, taking from eight months to a year and a half to cross the country. After such a journey, being exhausted and helpless, they could not be refused support by the Government. Later, when the Volunteer Fleet connection with the Far East was organized, system was introduced in colonization methods, but such colonization was still unsatisfactory, being too small and too expensive.

The real colonization of the Province began when the Trans-Siberian Railroad was opened to public use. After the Russo-Japanese War, colonization increased rapidly, owing to reports given by hundreds of thousands of returning soldiers, who had seen the fertile fields of South Manchuria. Many of these colonists were disappointed in finding that the country differed greatly from the description they had heard, and learned that instead of fertile fields, the Russian Far East was a land of mountains, forests, and fogs.

The policy of colonizing the country with the peasant class has to a great extent given way to that of encouraging settlement by laborers, such as bricklayers, carpenters, blacksmiths, etc. In addition to the cheap railway tickets, registration bureaus, feeding stations, and medical and sanitary attention of former years, the Gov-

ernment has made new concessions. Traveling expenses and the time of traveling have been reduced; workmen engaged in European Russia at Government expense were carried free of charge in 1911 and 1912. At the same time great efforts and concessions have been made to induce imported labor to remain in the country after the end of the building season. Rights were granted to them to join the cossack organization, or to become members of the existing peasant communities, etc. The same rights were offered to reserve soldiers and sailors.

It is too early yet to see the complete results of this policy, but its influence can be felt. There are more Russian domestic and other servants than formerly; in the towns Russian artisans are found here and there competing with Chinese, Japanese, and others. Government works have been Russified 100 per cent, and industries connected with Government contracts or ownership of land, brickmaking, timbering, etc., in the past two years (1911 and 1912), from 35 to 65 per cent.

MEASURES FOR REVIVING GOLD MINING.

At an interdepartmental meeting in St. Petersburg recently measures were discussed for the benefit of the gold-mining industry in the Priamur district, which has declined in recent years. The main factors affecting this industry have been the absence of free capital, shrinkage of bank credits, and pillaging in various ways by Chinese labor. In order to put an end to conditions which curtailed this industry, and to aid its natural development, the following recommendations were made:

1. To put Chinese on an equal basis with other foreigners in regard to rights of employment.
2. To restrict the employment of Chinese labor in mines in which the owners allow the laborers to work on their own account by paying a certain per cent of the output for the privilege.
3. To organize at Government expense hydrotechnical researches of mining regions, in order to learn the quantity and pressure of water in such places, with a view to introducing hydraulic-mining methods.
4. To reduce taxes and dues paid by gold miners, and to abolish special taxes which are now collected for the support of various Government institutions.
5. To open in the Government bank: (*a*) Short terms of credit against solo-promissory notes, guaranteed by the equipment of the mine, such as dredgers, etc.; (*b*) long term credit, guaranteed by the mine itself; (*c*) credit against shares and bonds of private joint-stock companies.
6. Road building in the mining districts, and credit to private companies for this purpose.
7. To abolish the 100-verst (66-mile) closed belt along the seacoast and to open it up for prospecting on general conditions.

Mining in the Maritime Province has undergone a great change in recent years. Formerly much attention was given to gold mining, to auriferous sand, so popular in Siberia, but with few exceptions the attempts to find good gold fields were unsuccessful. Traces of gold were found all over the country, but seldom in sufficient quantities to make mining commercially satisfactory.

REMAINS OF MINES AND BUILDINGS OF EARLIER INHABITANTS.

In this connection it should be remembered that the Maritime Province is not such a new country as may be imagined. In the

eleventh and twelfth centuries this territory was occupied by the Bohays, a nation which was lost or absorbed partly by Chinese and Mongolians and partly by Koreans. What little remains of the Bohay civilization, in the form of forts, blockhouses, and other buildings, or old mines, proves that it was of a comparatively high order.

In the southern part of the Province, in the region now occupied by the Suchan coal mines, exist ruins of a large fortress or town, in which even now can be traced the outlines of old wells, trenches, watercourses, and moats. The ruins also show an outside fort, connected with underground passages, a part of which are still in good condition and can be easily traced. Near by are the remains of an old copper mine. The ruins show where the smelters were situated and slag around these places proves that the methods adopted allowed for smelting a very hard ore. It is believed that the old Bohay art of smelting this ore is lost.

What little is known about this race indicates its high civilization. There are indications that this fortress was a center of high culture, having an Eastern university which was visited by Chinese and Korean scholars and learned men. History states that the teachers or professors in this university wore golden plates on their chests and backs with an inscription of their names and callings.

Under such conditions one may believe that gold mining was well developed in this Kingdom, and all over the country remains of old placer mines are found, quite different in the methods used from the later Chinese and Korean washings, which are also numerous. It would appear that the Bohays, and later Chinese and Koreans, have taken out all the best deposits, and that what remains is what happened to be missed by the old miners.

At present there are few large gold mines of the placer type in the whole Province. The only large undertaking in gold washing is the Orsk gold mine near Nicolaiefsk, which is using dredgers and machinery, principally of American manufacture. This is one of the few new mines started in the last few years.

Another large mining enterprise is developing near Tetuihe Bay. It is a silver-zinc mine and has shipped most of its product to Europe in a raw state, but in 1912 a shipment of 1,600 tons was made to the United States. The erection of a calcining works to reduce this ore has been planned.

In 1912 the country round Vladimir and Djiguit Bays was investigated by German mining experts with a view to opening a copper mine, and preparatory work has already been started.

MARITIME PROVINCE LEADS IN TIMBER PRODUCTION.

Timbering has attained a larger development in the Maritime Province than in any other Province in the Russian Far East. At present it is concentrated in and around Vladivostok and Khabarofsk, and along the Ussuri Railroad, because the population and the main Government works, which are the chief buyers and consumers of wood, are centered at those places.

About 70 to 75 per cent of the construction timber and lumber and from 80 to 90 per cent of the firewood produced in the Province is consumed by various branches of the Government, such as the

Engineering Department, Barrack Commissions, Ussuri Railroad, and the commercial and naval ports. Under these circumstances the lumbermen endeavor to keep their sawmills as near as possible to the buyer, and the local market is fully supplied. Many of the sawmills are modern in type, most of them being supplied with German and Swedish machinery, although American equipment is found occasionally.

Attempts have been made to find an outlet abroad for Priamur timber. Timbermen believe that when they become better equipped for the export trade, and move their sawmills from the railroad line to the water front, their timber will find its way into foreign markets. Shipments of cedar (kedr) are made to Japan and England. Notwithstanding the high prices paid for selected cedar, the export can not be considered as normal. Only select and crown wood find a ready market in England, and as the general run of Priamur timber is not of a very high grade, this lumber makes up only about 18 to 22 per cent of the log, leaving from 78 to 82 per cent of lower grade wood.

In the opinion of timbermen, so long as the Government work continues, there will be a sale for the middle and low class lumber, exporters being in a position to select the best wood for the English market, but when the Government finishes its program of construction, the amount of wood on the market will diminish and export grades will shrink. It is asserted that an attempt will then be made to go into the Chinese and Indian markets. It can not be said that at present the industry is adapted to the export trade, and local charges are too high for effective competition in foreign markets.

BETTER HANDLING AND SHIPPING FACILITIES NEEDED.

In 1911 and throughout 1912 means were sought to cheapen transportation and loading expenses. The question of lower freights has been taken up with the General Railroad Tariff Committee, in St. Petersburg. Storage and shipping expenses will be affected by the construction of a special timber wharf in Vladivostok Harbor, which will be large enough to accommodate four steamers at one time, and the construction of a branch railroad to connect this wharf with the main line. Improvements were planned in 1912 for a better adaption of Nicolaiefsk-on-Amur for the same purpose.

Hardly any timber is exported from Nicolaiefsk at present, owing to the fact that timber undertakings in the Province situated in the region north of Khabarofsk are not large and no interest has been taken in export. Loading facilities are poor and approaches to this town in the Amur River estuaries are shallow. The proposed improvements at Nicolaiefsk consist of the establishment of a special timber harbor in one of the branches of the main stream of the Amur River, from 40 to 45 miles above Nicolaiefsk, and deepening the approaches to the Amur River to 18 to 24 feet at low water. It is contended that when these improvements are made, this port will become important as a place for shipping timber, as the area of the Amur River basin is over 2,000,000 square miles and the length of streams suitable for rafting and floating timber is counted by thousands of miles.

The following table shows the timber exports from Vladivostok during 1912:

Exports.	Quantity.	Exports.	Quantity.
To England:		To China:	
Cedar—		Cedar—	
Logs.....cubic feet..	317,592	Logs.....cubic feet..	36,720
Sawn.....do....	361,650	Sawn.....do....	350
Oak, logs.....do....	8,306	Veneer.....square feet..	3,517
Veneer.....square feet..	118,059	To Korea:	
To Japan:		Cedar—	
Cedar, sawn.....cubic feet..	9,420	Logs.....cubic feet..	300
Aspen, short logs.....do....	307,204	Sawn.....do....	51,697
Veneer.....square feet..	408	To Russia in Europe:	
		Cedar, sawn.....do....	1,545
		Veneer.....square feet..	2,802

VLADIVOSTOK THE CHIEF PORT OF THE RUSSIAN FAR EAST.

Owing to its natural advantages, its good connections with the hinterland and with foreign shipping ports, and its position as terminus of the Transsiberian Railway system, Vladivostok has become the commercial port of the Russian Far East. Its annual turnover rose from 417,000 tons in 1907 to 1,145,000 tons in 1911, and it is estimated that in eight years, when the enlargement and improvement of the port is completed, the trade movement each year will be at least 2,500,000 tons. Its outgoing traffic consists chiefly of beans from Northern Manchuria, timber from Manchuria and the Ussuri region, minerals, and manufactured products of the recently organized local industries. Its incoming freight consists largely of agricultural machinery, mining and fishing equipment, foodstuffs, and other manufactured goods of Russian and foreign origin for the Priamur district, tea in transit to Europe, and goods bound for Manchuria.

In view of the vast natural resources back of Vladivostok and the growing commercial importance of the port, emphasis should be laid on the necessity for revising the old idea that this port is icebound in the winter. Strong northerly winds carry the thick ice out of the harbor in the coldest months, so that by the use of icebreakers the port is kept open and vessels enter and clear at any time in the year.

A German steamship company has decided to improve Vladivostok's connections with western Europe by establishing a line of steamers from Hamburg and Antwerp, and it is stated that the Russian Volunteer Fleet proposes to establish a line of steamers between Baltic ports and Vladivostok, to reduce the cost of Russian manufactured goods in the Russian Far East. A steamship service from Vladivostok to Vancouver, Tacoma, and Seattle has been under consideration by the Russian Volunteer Fleet. Direct sailings to these ports would greatly facilitate the exchange of products between the United States and Russia in Asia, and possibly in time warrant the extension of the line to San Francisco and even to the Atlantic coast by way of the Panama Canal.

Recognizing the opportunities for trade, a Port Said salt company has opened an office in Vladivostok for the sale of its product, chiefly in connection with the fishing industry. This company proposes to establish a regular steamship service, carrying cargoes of timber to Egypt on the return voyages.

EXPORTS SMALLER THAN IN 1911—EXPORTS TO THE UNITED STATES.

The exports of beans, other oilseeds, and grain from Vladivostok from November 3, 1911, to November 16, 1912, totaled 356,253 long tons, divided as follows: Beans, 346,719 tons; hempseed, 8,608 tons; linseed, 398 tons; millet, 440 tons; and barley, 88 tons. The exports of beans in the four preceding years were: 131,450 tons in 1908; 258,850 tons in 1909; 293,920 tons in 1910; and 462,535 tons in 1911. The total exports of all classes of goods, according to the report of the Vladivostok Trading Port, amounted to 456,097 long tons, a decrease of 64,500 tons from the 1911 figure. The drop was due to the bad harvest of 1911 and the disturbances which hindered the realization of the 1912 crop, such as the Hunghutzu depredations, adverse exchange, political uncertainty, etc.

The exportation of timber has already begun, the demand coming chiefly from China, Japan, and Australia. An English concern has contracted for regular monthly shipments of oak staves, boards, and planks, to be sent to British ports via Vladivostok.

The exports to the United States and the Philippine Islands in 1911 and 1912, as declared at this consulate, were valued as follows:

Articles.	1911		1912	
	Quantity.	Value.	Quantity.	Value.
TO THE UNITED STATES.				
Fusel oil.....pounds..	.....	.....	70,932	$25,699
Hides.....number..	.....	.....	10	53
Linseed.....pounds..	.....	.....	5,997	160
Personal effects.....	.....	$773	.....	300
Rubber, waste.....pounds..	300,698	21,493	392,672	28,113
Specimens, natural history.....	.....	.....	.....	386
Wool [1].....pounds..	365,857	52,750	.....	.....
Zinc ore.....do....	.....	.....	3,583,000	36,517
Total.....	.....	75,016	.....	91,228
TO THE PHILIPPINES.				
Bran.....pounds..	228,412	1,735	.....	.....
Cabbage, fresh.....do....	670,830	6,455	396,340	6,595
Potatoes, fresh.....do....	1,260,600	6,445	1,602,360	11,205
All other articles.....	.....	1,875	.....	288
Total.....	.....	16,510	.....	18,088

[1] Replace invoice was later issued at Harbin consulate.

No exports were declared at this consulate for Hawaii or Porto Rico in either year.

IMPORTS INTO VLADIVOSTOK.

The official figures covering imports into the port of Vladivostok during 1912 are not available, but the table following was compiled from data supplied by the Vladivostok Exchange Committee, which are more in the nature of estimates than accurate records. They divide the import trade among only the four countries having direct steamship communication with this port. Goods from Great Britain and other European countries, and those from the United States that are sent via Hamburg are included in the figures for Germany and China, being transhipped in ports of those countries. Nearly all American goods for the Russian Far East are transhipped in

Japan and are therefore recorded as coming from that country. At least 70 per cent of the agricultural machinery imported into the Russian Far East is American, and the 3,200 tons shown as having come from Germany consisted principally of American machinery transhipped in German vessels at Hamburg, Germany, or Kobe, Japan. The estimated quantities, in tons, of the principal imports are shown by the following table:

Articles.	Russia.	Germany.	China.	Japan.	Total.
Agricultural implements:	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Plows	203	204	12	.....	419
Machines	426	3,200	.....	718	4,344
Asphalt	.....	3,827	.....	.....	3,827
Automobiles and bicycles	.....	16	.....	.....	16
Bags, gunny, etc	65	943	29	104	1,141
Building materials:					
Bricks, fire	.....	759	1,567	.....	2,326
Cement	49,954	4,703	.....	.....	54,657
Gypsum	.....	353	.....	.....	353
Stone	.....	22	11	37	70
Biscuits, etc	44	5	.....	32	81
Candles	442	78	14	.....	534
Canned goods and provisions:					
Condensed milk	.....	396	93	841	1,330
Other	329	124	6	25	484
Cattle	.....	.....	3,933	.....	3,933
Chalk	3	534	.....	.....	537
Chemicals, drugs, etc	101	796	6	149	1,052
Coal and briquets	.....	1,659	.....	61,088	62,747
Coke	.....	410	.....	24	434
Copper, and manufactures of	25	92	1	.....	118
Cosmetics, soap, etc	361	13	19	20	413
Cotton, wool, manufactures of:					
Piece goods	675	47	400	262	1,384
Other	91	82	161	235	569
Electrical supplies	28	211	16	.....	255
Flour, all kinds	586	434	64	1,040	2,124
Fruits and berries:					
Dried	544	14	23	217	798
Fresh	.....	4	1,438	10,678	12,120
Glass, and manufactures of:					
Window	13	756	.....	4	773
Other	14	30	76	40	160
Grindstones, etc	7	254	.....	22	283
Groats	298	5	.....	.....	303
Hardware, etc	506	951	1	11	1,469
Household goods	119	516	78	54	767
Iron and steel, manufactures of:					
Assorted	117	1,507	.....	91	1,715
Boilers and engines	.....	342	.....	.....	342
Cast-iron, manufactures	115	1,499	.....	7	1,621
Galvanized	21	399	.....	.....	420
Hand tools	48	782	5	7	842
Machines and parts of	271	1,845	36	94	2,246
Nails	17	1,635	12	7	1,671
Pipe	49	1,376	4	57	1,486
Rails, railway supplies	88,118	3,496	.....	.....	91,614
Sheet	1,303	5,182	.....	318	6,803
Other	2,027	10,850	373	313	13,563
Lead, and manufactures of	128	138	.....	.....	266
Leather, and manufactures of:					
Boots and shoes	41	10	15	4	70
Other	135	4	8	2	149
Linoleum, oilcloth	86	37	.....	.....	123
Matches	43	56	.....	3	102
Mats and mattings	.....	11	395	367	773
Meat, frozen	.....	.....	3,408	.....	3,408
Mineral waters	170	226	.....	41	437
Naphtha	14	.....	48	.....	62
Nuts	98	7	787	3	895
Oats	.....	.....	.....	829	829
Oils and grease	3,050	138	290	169	3,647
Paints, varnish, etc	329	460	5	18	812
Paper, and manufactures of	,160	247	153	105	4,665
Paraffin, stearin, etc	2	946	63	.....	1,011
Pitch and tar	22	1,227	.....	32	1,281
Potash and soda	12	281	989	96	1,378
Rice and paddy	6	381	.....	19,281	19,668
Rope, cable, twine	186	983	57	[illegible]	1,71[illegible]
Salt	5	[illegible],643	27,042	1,313	[illegible],403

Articles.	Russia.	Germany.	China.	Japan.	Total.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Spices, condiments, etc	594	259	12	553	1,418
Spirits, wines, etc	5,082	388	46	25	5,541
Sugar	20,012	49	84	4	20,149
Tallow	9	134	1,567	320	2,030
Tea:					
Black	.....	.....	20,983	.....	20,983
Brick and compressed	.....	.....	24,334	.....	24,334
Tin, and manufactures of	2	1,016	338	184	1,540
Tobacco	1,305	3	1	.....	1,309
Utensils, household	216	660	199	9	1,084
Vegetables, fresh	72	21	3,178	7,271	10,542
Vehicles, etc	68	42	.....	.....	110
Wire, and manufactures of	459	776	.....	3	1,238
Wood, and manufactures of	77	77	1,276	148	1,578
All other articles	1,125	1,121	370	1,336	3,952
Total	184,428	69,098	94,026	109,104	456,656

In addition to the above the following goods were imported: Wheat from Australia, 5,511 tons; agricultural machinery from other countries, 1,239 tons; cattle from Chosen (Korea), 303 tons; sundry goods from other countries, 252 tons; making the grand total of imports, 463,961 tons.

The imports in 1912 were 83,039 tons in excess of those for 1911, the gain occurring chiefly in the items of agricultural machinery, which increased 3,847 tons; cement, which increased 32,710 tons; condensed milk, which gained 589 tons; dried fruits, 348 tons; hardware, 801 tons; railway supplies, 70,609 tons; sugar, 3,568 tons; and tea, 8,369 tons. The only important decrease was in salt, which dropped 43,110 tons, as a result of speculation in 1911, when large quantities were imported into both Vladivostok and Nicolaiefsk, overstocking the market. During 1912 some of this salt was put on the market at less than cost to enable owners to realize on it as soon as possible and avoid further losses.

A large quantity of tea passes through Vladivostok in transit for western points, being imported by water and forwarded by rail. The amount so shipped in 1908 was 45,050 tons; in 1909, 44,226 tons; in 1910, 62,968 tons; and in 1911, 43,210 tons.

VITAL STATISTICS—PASTEUR INSTITUTE.

According to the Statistical Bureau of the Maritime Province, the population of the Primorski on January 1, 1913, was 873,662. Nikolsk-Ussurisk contained 23,843 males and 10,875 females, a total of 34,718 persons living in 4,044 houses; Khabarofsk had 32,188 males and 17,300 females, a total of 49,488 persons living in 5,626 houses; and Nicolaiefsk had 8,027 males and 4,489 females, a total of 12,516 persons living in 1,989 houses. The latest statistics show that Vladivostok contains (excluding the military population) 94,935 inhabitants, of whom 71,646 are males and 23,289 females. Of these 53,957 are Russians, 784 Korean Russian subjects, 1,167 natives (Guiliaks, Orochens, and Kamchadals), 430 Jews, 286 Tartars, 8,210 Koreans, 28,787 Chinese, and 1,830 Japanese.

Vladivostok has 6,493 buildings, of which 1,586 are of brick and 4,907 of wood. There are 10,965 domestic animals, of which 6,145 are horses and 1,870 cattle. Industrial establishments include 11 mineral

and aerated water factories, employing 83 men, with a total turnover of $36,977, and 145 factories, laundries, and bakeries employing 2,273 men, with an annual turnover of $2,269,301. In 1912 there were 48 fires, with a loss amounting to $147,960.

The Pasteur Institute in Vladivostok was opened in 1899, and since that time 4,642 cases have been treated there, with only 24 deaths. The patients come from Manchuria, the Maritime, Amur, Transbaikal, and Saghalin Provinces, Korea, and China.

EDUCATION—POST AND TELEGRAPH SERVICE.

The Priamur district has a university and 20 higher-class schools, which are attended by 6,444 students, and 11 lower-class schools, with 1,504 students. Including grammar, grade, parochial, and Cossack schools, the total for this district is 914, with an attendance of 57,567. Not included in this total are certain schools in Kamchatka and others belonging to the ecclesiastical, Army, Navy, ways and communication, and agricultural departments, and the ministry of finance, which bring the total up to 950, with an attendance of about 60,000.

The staff of the Vladivostok post and telegraph service in 1912 consisted of 156 officers and 85 letter carriers, and the incoming and outgoing mails numbered 1,926 in each direction. The office handled 8,720,430 pieces of mail matter, besides parcels, and 452,367 telegrams. Money transfers numbered 248,683, with a total value of $8,623,156. The total income was $317,383, and the expenses $98,999.

The wireless telegraph station at Petropavlosk is in working order and connects the Kamchatka Peninsula with Nikolaiefsk-on-Amur. Wireless stations will also soon be completed and opened at Ayan, Ghijiga, Anadir, and other places.

COASTING TRADE RECEIVES MUCH ATTENTION.

The Priamur district received much study during 1912, and improvements were planned and measures taken for their practical carrying out. A great deal of attention was paid to steamer and telegraphic communication along the coast. Steamship connections with Kamchatka were greatly improved by sailings of the steamers of the volunteer fleet early in the spring, thereby enabling fishermen to reach their fishing stations in ample time with their supplies and laborers, and additional vessels were put on in the autumn to transport the fish products to market.

The law closing the coasting trade to foreign ships and the rules for the Russification of the crews on vessels under the Russian flag have caused many changes. Formerly the coasting trade was carried on largely by Chinese and Korean junks, but these can not engage in this traffic under the new laws, and many of them have changed hands.

The coast of the Russian Far East is served by the Volunteer Fleet and the Count Kaiserling steamship lines. The former company controls the Northern Okhotsk and Kamchatka Line, and their steamers call at a few other ports north of Imperial Harbor. The Count Kaiserling Steamship Co. has the lines on the Amur and Ussuri Bays and the Sea of Japan up to Imperial Harbor. As the coast trade is gradually developing, there is room for other lines, but the growth in the number of Russian ships in the Far East is slow, on account of

the lack of free capital and certain peculiarities of the country and climate.

The only properly equipped harbors on the Pacific coast of the Russian Far East are those of Vladivostok, Nicolaiefsk, Petropavlosk, and Alexandrofsk, on the island of Sakhalin, and there are few safe natural harbors. The Government has taken up this question, and in 1912 meetings of local experts were called to decide what ports of refuge are to be equipped, and what is to be done to make them answer the demands of navigation. The high rates of Russian marine insurance form another drawback. In 1912 a project for a purely local mutual marine insurance company was presented to the St. Petersburg authorities.

Climatic conditions also hinder the growth of coastwise navigation. With the possible exception of Possiet Bay, the coast freezes from about the end of November to the end of April or May, compelling Russian coasting vessels to remain idle for five or six months each year. The high wages paid to Russian sailors make it impossible for Russian vessels to trade in Chinese and Japanese waters during their idle season. In 1912 an extensive plan was worked out for subsidizing private vessels having a carrying capacity of more than 33 tons, and it is expected that this will encourage the development of the trade.

The study of the Amur River estuary by the steamer *Okhotsk*, of Gen. Shdanko's expedition, was almost completed in 1912. This expedition also made numerous studies of the Okhotsk Sea and located a number of harbors on that coast, which was formerly regarded as having no safe harbors.

The two specially built ice breakers *Taumir* and *Waigach* in 1912 successfully surveyed the northern shores of Siberia between the mouth of the Kolima River and the estuary of the Lena, this survey being a part of the search for a northern passage between the Russian Far East and Archangel and the White Sea, which is still being pursued.

AMUR RAILROAD—VLADIVOSTOK STREET RAILWAY—BANKS.

The work along the eastern section of the Amur Railroad has caused a great deal of activity in the country north of Khabarofsk. Tens of thousands of workmen were employed on the railroad in 1912; post and telegraph stations were opened along the line, new roads were built, and villages and settlements are growing up near every projected railroad station. Many prospectors and mining engineers are searching for gold and coal. This belt, like the rest of the Russian Far East, shows gold everywhere, and here and there small gold mines have been opened. Good coal fields were also located along the line of the railway, and in 1912 it was established that the Amur Railroad is guaranteed its coal supply from local mines.

An electric railway system was completed in Vladivostok during 1912 and street cars began running in the principal streets. An extension of this system has also been proposed.

In 1912 the attempt to become independent of local branches of private banks was carried out, not only in towns, but even by the

village communities. Considering the enormous size of the Russian possessions in the Far East, the small population, and the great distances between most of the smaller centers and banking towns, it is easy to understand the difficulties in the way of application to the banks by the inhabitants of small villages in case of necessity. In 1911 the Government Bank introduced small savings and mutual credit banks among the villages, and in 1912 this plan was carried out on a larger scale. These small banks, established with capitals of $500 to $1,500 supplied by the Government Bank, proved of great assistance to the inhabitants of the villages, and in one or two years such banks have considerably increased their capital and been transformed into joint-stock associations.

PROJECTS FOR IMPROVEMENT OF COAST PORTS.

In the next few years the Russian Far East will undergo some large and important changes. The Amur Railroad will be fully completed for all purposes in two or three years, and the Ussuri Railroad, which is to connect the Amur Railroad with the Pacific Ocean and the Chinese Eastern line, must be made ready to handle the increased traffic. For this purpose the line is to be double-tracked and some of the heavy curves and ascents made easier. According to information received from the technical staff of the Ussuri Railroad, these improvements will cost about $15,480,000. As the opening of the Amur Railroad will also affect the turnover of Vladivostok and Nicolaiefsk, these ports will be improved and enlarged. Plans for the improvement of Vladivostok as a port have been approved, and preliminary work costing about $987,500 was ordered for 1913. Additional improvements will be made later.

In order to improve the port of Nicolaiefsk, the approaches to this city in the Amur River estuary are to be deepened. At the present time it is the intention to deepen the Sakhalin Channel to only 18 feet, but on account of the opposition which such a small depth has created in local shipping circles, a new project is on foot to make one of the channels 22 feet deep.

As there are only two ports, more or less equipped, in the Japan Sea and Tartar Straits, navigation in these waters is handicapped by the absence of places of refuge in bad weather. To overcome this difficulty and facilitate coasting navigation, as well as to support such industries as fishing, timbering, and mining, it has been decided to equip Possiet, Suifun, Skotova, Kangausa, St. Olga, Vladimir, Djiguit, Tetuhe, Imperial Harbor, and other places with the necessary fire signals, lighthouses, bells, etc., to fit them for navigation purposes. In some of these places some dredging will be done and wharves and landing accommodations constructed. This project, which is already under way, calls for an expenditure of $2,575,000 to $3,605,000.

To facilitate and develop coal mining in Sakhalin, it has been decided to build a properly equipped port at Alexandrofsk. Engineer Saharoff's project for such a port has been accepted and will be carried through. The estimated cost of this port is about $2,575,000.

The Amur River is to be dredged and, to make it possible for seagoing vessels to enter the river at Nicolaiefsk with a draft of 16 to 17 feet, some of the sand and stone bars in the river will be removed as soon as possible.

SHIP BUILDING ON THE AMUR RIVER.

To obtain an idea of the extent of ship building in the Amur River Basin, the progress of past years should be noticed. During the winter of 1910–1911 there were built 21 steamers and 6 steam and motor launches, representing a total of 2,909 indicated horsepower, with a carrying capacity of 2,700 tons; besides 24 barges with a carrying capacity of 11,100 tons. Of the steamers mentioned, 4 were stern-wheelers adapted to carry passengers, and two were large steel towboats of 300 indicated horsepower, brought out from Russia in Europe knocked down, and set up afterwards. One of them was built in Helsingfors, and the other in Perm.

Altogether the Amur Basin fleet consisted of 446 vessels, of which 118 were steel and iron steamers and 88 wooden steamers, representing 45,000 indicated horsepower, and a carrying capacity of 18,833 tons; 47 were steam and motor launches of 1,500 indicated horsepower; 170 were steel and iron barges and 23 wooden barges, with a carrying capacity of 109,935 tons. The capital invested was $10,321,115.

OPPORTUNITIES FOR SALE OF AMERICAN GOODS.

There is no doubt that American trade with the Russian Far East is retarded by the absence of direct steamship communications. Opportunities exist here for the sale of American agricultural machinery and implements of all kinds, marine motors, automobiles, sawmill, and woodworking machinery, mining machinery, condensed milk, novelties, office furniture, typewriters, semiportable engines and outfits, etc. To develop this trade, however, will require personal representatives speaking Russian and residing in this country, to maintain a permanent organization. Locally appointed agents are not usually satisfactory. It would be a good idea to establish an American joint-selling agency in Vladivostok, as, owing to the lack of American representation, orders are being taken by foreign firms which should go to the United States. Russian-speaking travelers should visit this country to investigate opportunities personally.

American goods enjoy a good reputation here, and the matter of price is not a hindrance to their purchase, as buyers prefer good articles to cheap imitations. Arrangements can be made to have local banks carry credits in most cases, but credits must be given in accordance with the long-standing custom.

BIBLIOGRAPHY.

PUBLICATIONS OF THE BUREAU OF FOREIGN AND DOMESTIC COMMERCE.

A brief list of the principal publications of the Bureau of Foreign and Domestic Commerce dealing with particular phases of Russian economic life is given here for reference. Copies of the publications listed may usually be obtained for the price stated from the Superintendent of Documents, Government Printing Office, Washington, D. C.

American agricultural implements in Europe, Asia, and Africa, by Roland R. Dennis. Special Agents Series, No. 28, 1909. Sixteen pages are devoted to the manufacture of these implements in Russia and the opportunities in that country for the sale of American implements. Price, 10 cents.

Machine-tool trade in Austria-Hungary, Denmark, Russia, and the Netherlands, by Godfrey L. Carden. Special Agents Series, No. 34, 1910. Twenty-four pages are devoted to a description of the equipment and operation of the principal machine shops of Russia. Price, 15 cents.

Cotton goods in Russia, by Ralph M. Odell. Special Agents Series, No. 51, 1912. Contains a general outline of the history and present development of the Russian cotton industry, sources of supplies and machinery used, wages and labor conditions, nature of output and cost of production, character of the import and export trade in cotton goods. Special attention is devoted to the larger cotton mills, and a list of the mills of the country, with their locations, number of spinning and twisting spindles, and looms is included. Price, 5 cents.

Foreign credits, by Archibald J. Wolfe and American consular officers. Special Agents Series, No. 62, 1913. A study of the foreign credit problem, with a review of European methods of financing export shipments, supplemented with reports by American consular officers on credit conditions in their respective districts. Consular reports from Moscow, Batum, Odessa, Warsaw, and Vladivostok are included. Price, 30 cents.

Shoe and leather trade in Russia, by Arthur B. Butman. Special Agents Series, No. 68, 1913. This monograph includes a study of the boot and shoe industry of Russia and Finland; hide and skin production and trade; the tanning industry; market for leather and boots and shoes of foreign production; a list of the boot and shoe manufacturers of Russia, with their daily output and the class of work done. Price, 5 cents.

Cordage and twine trade in foreign countries. Special Consular Reports, No. 45, 1911. Presents statistics of trade; discusses character of goods in demand, sources of supply, extent of home production, conditions under which American trade can be extended. Price, 5 cents.

Optical-goods trade in foreign countries. Special Consular Reports, No. 46, 1911. Presents information as to the extent of the use and sale of such wares, and the sources of supply, with special reference to the sale of American goods. Price, 10 cents.

Foreign salt market and industry. Special Consular Reports, No. 52, 1912. Gives statistics of production and consumption, prices, methods of sale, and opportunities for introduction of the American product. Price, 10 cents.

Foreign markets for motor vehicles. Special Consular Reports, No. 53, 1912. Presents information as to number and types of cars in use, domestic production, imports, exports, and sales methods. About one page devoted to Russia. Price, 10 cents.

Development of motor-vehicle trade abroad. Special Consular Reports, No. 59, 1913. Supplements number 53. About two pages devoted to Russia. Price, 5 cents.

Foreign trade in canned goods. Special Consular Reports, No. 54, 1912. Presents data on the canning industries of foreign countries, cost of production and

value of output, consumption, import and export trade, class of goods in demand, prices, methods of packing, sources of supply. Price, 15 cents.

Foreign trade in musical instruments. Special Consular Reports, No. 55, 1912. The subject matter is presented in three sections, dealing, respectively, with pianos, piano players, and player pianos; phonographs and similar instruments; organs and string and band instruments. Brief reports from Russia are included in each division. Price, 10 cents.

Foreign trade in paints and varnishes. Special Consular Reports, No. 56, 1912. Discusses demand for paints, pigments, and varnishes, sources of supply, domestic production, imports, trade methods, etc. A brief report from Moscow is included. Price, 10 cents.

Foreign markets for railway supplies and equipment. Special Consular Reports, No. 60, 1913. Contains lists and descriptions of railways and their equipment. About five pages devoted to Russia. Price, 25 cents.

Reports on the commerce and industries of Russia similar to those embodied in this monograph are prepared each year by the various consular officers and contain a large amount of information of value to American manufacturers and importers. Beginning with the reports for 1910, these annual reviews have been published in Daily Consular and Trade Reports and afterwards assembled, together with those from all of the other American consuls, in abridged form in one volume, bearing the title "Commercial Relations of the United States." The following list shows the dates on which the reports from Russia have appeared in Daily Consular and Trade Reports. Copies may be obtained from the Bureau of Foreign and Domestic Commerce until the edition is exhausted. Those marked with an asterisk (*) are already exhausted, but file copies will be loaned by the bureau:

Moscow, reviews of all Russia: 1910—Oct. 14, 1911; 1911—Apr. 15, Sept. 25, Oct. 5, Oct. 9, *Oct 23, 1912.
Batum district: 1910—Dec. 2, 1911; 1911—Oct. 18, Dec. 9, 1912.
Odessa district: 1910—Dec. 2, 1911; 1911—Jan. 25, 1913.
Riga district: 1910—Dec. 2, 1911; 1911—Jan. 8, 1913.
St. Petersburg district: 1910—Dec. 2, 1911; 1911—Aug. 5, 1912, Jan. 8, 1913
Siberia: 1910—*Dec. 6, 1911; 1911—Jan. 15, 1913.
Warsaw: 1910—Dec. 2, 1911; 1911—Dec. 6, 1912.

REFERENCE WORKS ON SIBERIA.

Although the Russians have been in possession of this country for more than 50 years, and of Kamchatka for a much longer period, it is little known by the general public, and the information that has been gathered is meager and poorly systematized. An important work in the Russian language on the Russian Far East is Gen. P. F. Unterberger's book "Priamur Region, 1906–1910," published by the Russian Geographical Society, St. Petersburg, in 1912. Gen. Unterberger served in various capacities in the Russian Far East, as military engineer, governor, and governor general, for 38 years, and many phases of life in this region grew up during his participation in the administration of the country.

The first more or less systematic review of the country was made by L. Smirnoff in 1899, for the first Khabarofsk Exhibition, under the title "Priamur Region." In 1900 Gen. Unterberger issued his first book on the country, "Priamur District, 1856–1896," of which his recent book is really a continuation. The later book was called forth by the doubts of the Russian public as to the value of Russia in Asia, which arose after the Russo-Japanese War. If the country

was to be kept it must be colonized and Russified at an expense of millions of rubles, and the general public had difficulty in understanding how a country that had already consumed one billion rubles could require further expenditures, considering the small number of inhabitants and the narrow strip of inhabited land. "They had forgotten," says the writer, "that the Russian Far East is not only one of many similar outskirts of the Empire, but it is also the eastern outsentry, the eastern military frontier, and that over 90 per cent of the money spent in it was spent not for the express benefit of this particular part of Russia, but for the benefit of, and to guard, the whole Empire."

This new work attempts to give a full and true picture of the country from various viewpoints and to show its value as an outlet for the more densely populated provinces of European Russia. Gen. Unterberger dwells at some length on the subject of migration from European Russia, the colonization and exploitation of the free land, giving a history of the Russian movement toward the East. He also described the rôle of the Cossack migration and its influence on the opening of the country. Much attention is given to the race question and the competition of Chinese and Koreans with Russian immigrants as well as to the general labor question in connection with Government, military, and other works.

Agriculture, cattle raising, hunting, cottage work, manufacturing, timbering, fishing, and other industries are described in sufficient detail to give a good idea of the situation. The writer also describes the public health and educational organizations, the trade of the region, its commercial centers and communications, etc., touching on the Amur River system, Vladivostok and Nicolaiefsk as ports, the Amur Railroad, wagon roads, the coasting service, navigation, etc. Sakhalin and Kamchatka are described in special chapters.

Another recent book on the Russian Far East, also in the Russian language, is "Our Extreme Northeast," by Capt. N. F. Kallinikoff, which appeared late in 1912. The author is the captain of one of the Siberian regiments stationed in Vladivostok, and after the Russo-Japanese War was commissioned to make an economic study of the Chukotsk Peninsula. That region is so little known that even its boundaries are not fixed, either geographically or for administrative purposes, although it has belonged to Russia for centuries.

Capt. Kallinikoff describes the country as he saw it, and includes the first more or less detailed map of the region. He gives some historical information about the former presence of Russians in the district, describes the life and customs of the natives, and touches in some detail on the trade and influence of Americans in this region. Comparing this territory with Alaska, Capt. Kallinikoff indicates that its value will in time be similar. Single copies of both these books are on file in the Bureau of Foreign and Domestic Commerce.

FOREIGN CORPORATIONS IN RUSSIA.

The following résumé of the Russian laws governing the operations of foreign corporations in that country and of the agreement between the United States and Russia regulating the position of corporations and other commercial associations was prepared by Mr. C. J. Medzikhovsky, commercial attaché of the Imperial Russian Embassy in Washington:

OPERATIONS OF FOREIGN CORPORATIONS AND STOCK COMPANIES IN RUSSIA.

The general conditions under which foreign corporations and stock companies are allowed to operate in Russia are as follows:

1. The company is required to comply with the laws and regulations in force in Russia in regard to its operations, as also with the existing regulations on Government industrial taxation and those which might be issued later.

2. The real and other estate belonging to the company within the limits of the Empire, as well as all payments accruing to it, shall be used preferentially for the payment of dues arising from its operations in Russia.

3. The purchase or lease by the company and use of real estate in Russia shall take place according to the existing laws in general and to the imperial ukase of March 14, 1887, in particular, exclusively for the needs of the enterprise and after previous ascertaining by the local Government authorities of the reality of this necessity of purchase; the subsequent sale or mortgage of such property obtained by the company in Russia not to take place without the special permission for each time of the Minister of Commerce, with defense to the company of showing in any way whatever a depreciation of said property.

4. A special responsible agency shall be established for the management of the affairs of the company, to which both the Government and private persons can resort in case of need in regard to all affairs concerning the company, and whose actions are binding for the company; the latter to notify the Minister of Commerce of the locality where such agency is established and to announce its establishment in the Government Gazette, the Journal of Finance, Industry, and Commerce, the newspapers of both capitals, and in the local provincial papers, complying with the established rules.

5. According to paragraphs 102–104, 107, and 110 of the Regulations on Governmental Industrial Taxation, the responsible agency managing the affairs of the company in Russia shall: (*a*) Present to the Ministry of Commerce in two copies, and to the local exchequer of the Government where the agency is located in four copies, within two months of the confirmation by the general meeting of stockholders, all accounts and balance, both general (regarding all operations) and partial (regarding operations in Russia), including copies of the procedure of confirming the accounts; (*b*) publish in the Journal of Finance, Industry, and Commerce final balances and excerpts from the annual accounts of the company, showing in substance as regards operations in Russia the sum of the foundation capital for such operations, the reserve and surplus capital, profit and loss for the year, and the net revenue from such operations; (*c*) communicate to the exchequer or the director of the latter all supplementary information and explanation that may be demanded and is necessary for the verification of the accounts, with responsibility for nonfulfillment of the requirements mentioned above, according to paragraphs 104–164 of the Regulations on the Government Industrial Taxation, and in the cases indicated in paragraph 110 of the above regulation submit to the requirements of the local exchequer concerning revision and verification of accounts for the purpose of ascertaining the net profit, of books and justifying documents as well as of the buildings belonging to the company.

6. The shareholders shall be notified by publication in the above-mentioned papers of the time and place of a general meeting at least one month before the day on which it is to take place, stating in the publications the subjects to be considered at the general meeting and designating the banking establishment in Russia where the shares have to be presented for the purpose of obtaining the right to attend and participate in the general meeting.

7. Suits arising against the company in matters concerning its operations in Russia shall be conducted according to laws in force in Russia and before Russian tribunals.

8. The operations of the company shall be limited exclusively to the purpose expressed in these conditions, and the merging into one or the union of several such companies or undertakings, as well as the amendment or amplification of its statutes (partially concerning the increase or decrease of its foundation capital and the issue of shares) shall not take place without the previous application by the company for permission from the Ministry of Commerce in Russia, and the company shall notify this ministry of any liquidation.

9. The company, in closing its operations in Russia, shall submit to the existing laws and regulations of the Government and those that may be issued hereafter.

10. The property of the company located within the confines of the Empire, and all payments made to it, shall be used for the payment of claims arising from its operations in Russia. (Compendium of Laws of 1900, No. 29, pars. 554 and 555.)

Foreign stock companies desiring to receive authorization for operating in Russia should, first of all, present their statute to the Imperial Russian consulate general or consulate in their district, in order that the latter may certify its being drawn up according to the laws of the country. The statute is then forwarded with a translation, certified by the Russian official translator, to the Ministry of Commerce and Industry, complying with the demands stated in paragraphs 1 and 2 of the above-mentioned conditions. The Ministry of Commerce and Industry, upon finding that the said application is to be granted, forwards a statement to that effect to the Council of Ministers for the purpose of petitioning the imperial permit for the confirmation of special conditions for each individual company.

The above-mentioned statute of the company, as well as its translation, and a petition in the name of the Minister of Commerce and Industry requires stamps to the value of 1 ruble 25 copecks ($0.64) for each sheet of four pages. It is not necessary to have an attorney in St. Petersburg for the purpose of obtaining the authorization. The papers may be sent by mail to the Minister of Commerce and Industry.

ADMISSION WITHOUT IMPERIAL PERMIT.

By regulation of the Committee of Ministers, approved by the Emperor on July 8, 1888, concerning the admission of some foreign stock companies to operate in Russia without application for imperial permission, the following has been established:

Industrial foreign stock companies, whose operations in Russia are limited exclusively to the sale of objects manufactured abroad, as well as foreign steamship enterprises founded on shares transporting freight and passengers directly between foreign and Russian ports, shall be exempted from the obligation of applying for an imperial permit for this purpose, on the condition that the agents of such corporations shall submit, in the name of the latter, in their commercial operations in Russia, to the general rules and regulations governing the clerks of foreign merchants, and pay the dues and taxes according to the kind and extent of their operations. (Compendium of Laws of Sept. 23, 1888, No. 93, par. 873.)

The agreement between the United States and Russia for the regulation of the position of corporations and other commercial associations, which was signed at St. Petersburg June 25/12, 1904, and proclaimed June 15, 1909, is as follows:

The Government of the United States and the Imperial Russian Government having judged that it would be mutually useful to regulate the position of Corporations or Stock Companies and other Commercial Associations, industrial or financial, the undersigned, by virtue of the authority which has been vested in them, have agreed as follows:

1. Corporations or Stock Companies, and other industrial or financial commercial organizations, domiciled in one of the two countries, and on the condition that they have been regularly organized in conformity to the laws in force in that country, shall be recognized as having a legal existence in the other country, and shall have therein especially the right to appear before the courts, whether for the purpose of bringing an action or of defending themselves against one.

2. In all cases the said Corporations and Companies shall enjoy in the other country the same rights which are or may be granted to similar companies of other countries.

3. It is understood that the foregoing stipulation or agreement has no bearing upon the question whether a Society or Corporation organized in one of the two countries will or will not be permitted to transact its business or industry in the other, this permission remaining always subject to the regulations in this respect existing in the latter country.

This Agreement shall go into force on the 25/12 of June 1904, and shall only be discontinued one year after its denunciation shall have been made by one of the parties to the agreement.

Made in duplicate at St. Petersburg, the 25/12 day of June 1904.

COUNT LAMSDORFF. [SEAL.]

ROBERT S. MCCORMICK. [SEAL.]

RUSSIAN WEIGHTS AND MEASURES.

The unit of Russian currency is the ruble, valued at $0.515, which is divided into 100 kopecks.

MEASURES OF LENGTH.

1 verschok =1.75 inches.
1 arshin (16 verschoks) =2 feet 4 inches.
1 sazhen (3 arshins) =7 feet.
1 verst (500 sazhens) =1,166⅔ yards.
1 verst =3,500 feet.
1 verst =1.066781 kilometers.
1 verst =0.6629 mile.
1 yard =0.428571 sazhens.
1 yard =1.285714 arshins.
1 mile =1.508571 versts.
1 mile =754.285714 sazhens.

SQUARE MEASURE.

1 square arshin=5.44 square feet.
1 square sazhen=5.44 square yards.
1 dessiatine =2.7 acres.
1 dessiatine =1.0925 hectares.
1 morga =1.3 acres.
1 square verst =0.44 square mile.
1 square yard =0.183673 square sazhen.
1 acre =0.3704 dessiatine.
1 square mile =2.275787 square versts.
1 square mile =237.061224 dessiatines.

CUBIC MEASURE.

1 cubic verschok=5.359375 cubic inches.
1 cubic verschok=87.819661 cubic centimeters.
1 cubic arshin =0.4705 cubic yard.
1 cubic arshin =0.3597 cubic meter.
1 cubic sazhen =12.7037 cubic yards.
1 cubic sazhen =9.7171 cubic meters.
1 cubic yard =0.078717 cubic sazhen.
1 cubic yard =2.125 cubic arshins.

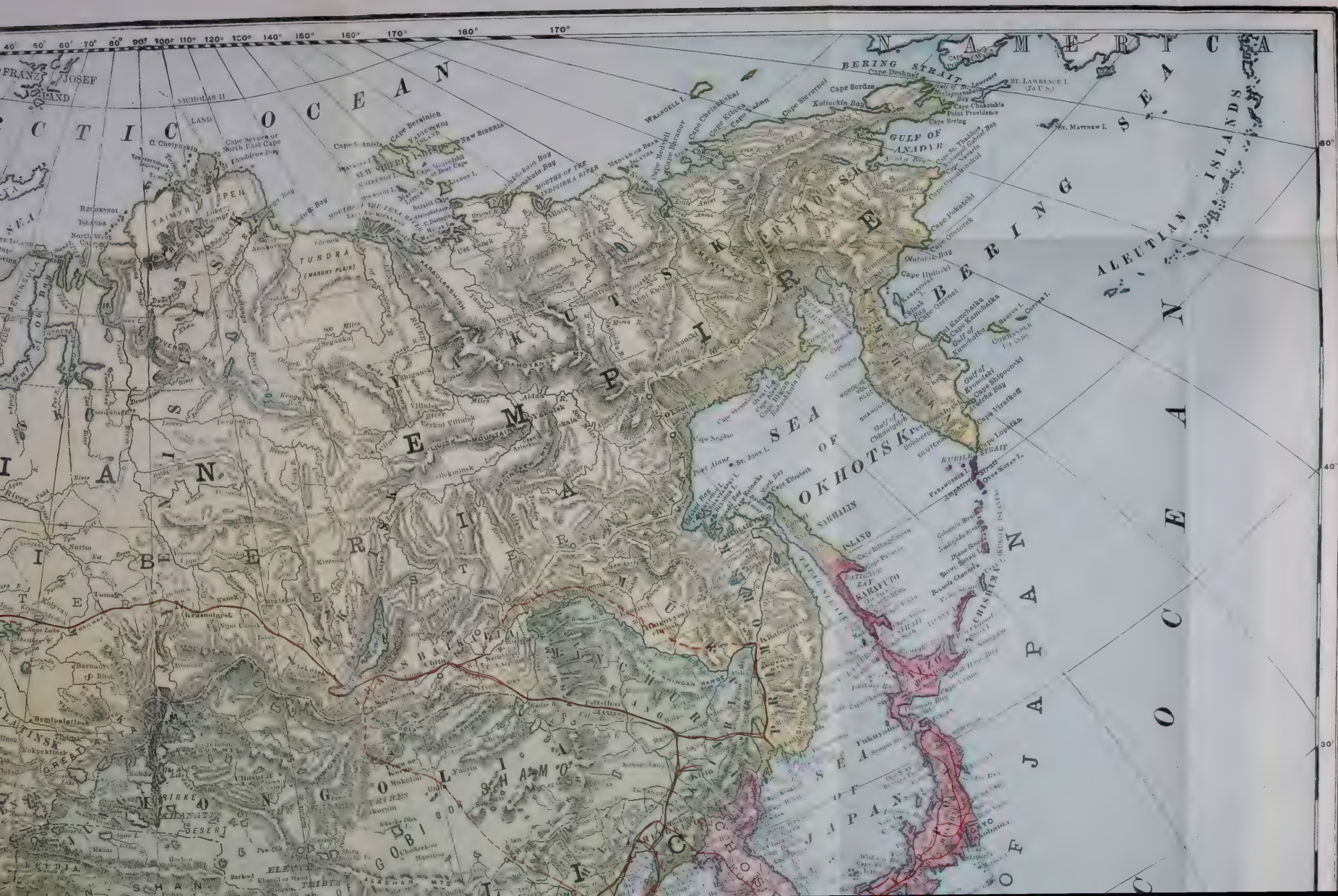
WEIGHTS.

1 doli =0.68576 grain.
1 doli =0.0014286⅔ troy ounce.
1 zolotnick (96 doli)=0.15047 avoirdupois ounce.
1 zolotnick =0.137152 troy ounce.
1 funt (96 zolotnicks=13.166592 troy ounces.
1 funt =0.90281179 avoirdupois pound.
1 pood (40 funts) =526.66368 troy ounces.
1 pood =36.1127 avoirdupois pounds.
1 lot (3 zolotnicks) =0.45 avoirdupois ounce.
1 korzec =216 avoirdupois pounds.

CAPACITY MEASURE.

1 tchetvert=5.77 imperial bushels.
1 tchetvert=5.95 American bushels.
1 vedro =2.7 imperial gallons.
1 vedro =3.249 American gallons.
1 last =2 tons registry.
1 last =200 cubic feet.

ATLANTIC OCEAN
ARCTIC OCEAN
ICELAND
FRANZ JOSEF LAND
SPITSBERGEN
NOVAYA ZEMLYA
ARCTIC CIRCLE
BRITISH ISLES
NORTH SEA
NORWAY
SWEDEN
FINLAND
GULF OF BOTHNIA
BALTIC SEA
GULF OF FINLAND
WHITE SEA
KARA SEA
ARCHANGEL
PETROGRAD
MOSCOW
RUSSIA
GERMAN EMPIRE
AUSTRIA-HUNGARY
VIENNA
BERLIN
PARIS
ROME
CONSTANTINOPLE
BLACK SEA
MEDITERRANEAN SEA
CIRENAICA (BARCA)
CAIRO
EGYPT
SYRIA
ARABIA
CAUCASUS MOUNTAINS
CASPIAN SEA
TRANS-CASPIAN PROVINCE
TURKESTAN
KYZYL-KUM DESERT
KARA-KUM DESERT
TASHKEND
KHIVA
BOKHARA
TEHERAN
PERSIA
URALS
SIBERIA
TUNDRA
TAIMYR PEN.
OB R.
YENISEI R.
LENA R.
KAMA R.
VOLGA R.
OMSK
TOBOLSK
TOMSK
IRKUTSK
YAKUTSK
KRASNOYARSK
ORENBURG
ASTRAKHAN
TIFLIS
BAKU
TIEN SHAN MTS.
KIRGHIZ STEPPE
STEPPE OF EMBA
MONGOLIA
GOBI DESERT
MANCHURIA
KHINGAN MTS.
AMOOR R.
KHABAROVSK
NIKOLAIEVSK
SEA OF OKHOTSK
KAMCHATKA PEN.
BERING SEA
BEAR ISLAND
FRANCE
ENGLAND
SCOTLAND
IRELAND


ARCTIC OCEAN
FRANZ JOSEF LAND
NICHOLAS II LAND
NEW SIBERIA
C. Chelyuskin
Cape Severo or North East Cape
Cape Beranitch
Cape S. Anisia
Cape Shalaulov
Bear Cape
Cape Severnoi
Thaddeus Bay
Yugorskoi Shar Strait
Yugor Peninsula
Rzhevskoi
North West Cape
TAIMYR PEN.
Lake Taimur
Dudinka
Yenisei R.
Yenisei Bay
Mouth of the Yenisei R.
Glinsk
TUNDRA (MARSHY PLAIN)
Ust Yenisk
Anabar R.
Anabar Bay
Mouths of the Lena R.
Lena Delta
Yana Bay
Mouths of the Indigirka R.
Indigirka R.
Medvejon or Bear I.
Wrangell I.
Cape Chelagskoi
Cape Kibkoi
Cape Yakan
Cape Severnoi
Cape Serdze
Kolimchin Bay
BERING STRAIT
Cape Deshnef
Gulf of St. Lawrence
Anadyrskaia Bay
Cape Chukotskoi
Point Providence
Cape Bering
St. Lawrence I. (To U.S.)
St. Matthew I.
GULF OF ANADYR
Anadyr R.
Anadyr Bay
Cape Olutorskoi
Cape Olutorski
Cape Povkatchi
Olutorsk Bay
Cape Ilpinski
Kamchatka R.
Cape Kamchatka
Gulf of Kamchatka
Cape Ozernoi
Copper I.
Bering I.
Commander Is.
ALEUTIAN ISLANDS
BERING SEA
KAMCHATKA PENINSULA
Gulf of Kronotski
Cape Shipounski
Avatcha Bay
Cape Lopatka
Cape Ilratkoi
KURILE STRAIT
Paramushir I.
Onnekotan I.
SEA OF OKHOTSK
Gulf of Chekanguich
Bolsheretsk
Cape Nagchan
Port Aiane
St. Jonn I.
Cape Elisabeth
Robert Rock
Reinecke I.
Stanovoi Mts.
Aldan R.
Aldan
Olekminsk
Lena R.
Lena
Yakutsk
Verkhoyansk Mts.
Verkhoyansk
Oimiakon
Oimiakon R.
Kolyma R.
Kolymskoi Mts.
Kolymskoi Ridge
Kolyma
Yana R.
Yana
Indigirka R.
Indigirka
Shigansk
Viluisk
Viluisk R.
Verkni Viluisk
Viluisk Mts.
Kengkel
Segankel
Olenek R.
Olenek
Khatanga R.
Khatanga
Dudinka
Norilsk
Yenisei R.
Yenisei
Turukhansk
Kureika R.
Kureika
Yeniseisk
Angara R.
Angara
Irkutsk
Lake Baikal
Baikal
Selenga R.
Selenga
Verkhni Udinsk
Kiakhta
Nerchinsk
Nerchinsk Mts.
Shilka R.
Shilka
Argun R.
Argun
Hailar
Hailar R.
Manchuria
Manchuria Station
Trans-Siberian Railway
Barnaul
Biisk
Kuznetsk
Kuznetsk Basin
Tomsk
Kansk
Krasnoiarsk
Achinsk
Minusinsk
Abakansk
Abakan R.
Abakan
Kuznetsk Alatau Mts.
Sayansk Mts.
Tannu Ola Mts.
Tannu Ola
Uriankhai
Uriankhai Mts.
Kobdo
Kobdo R.
Kobdo Lake
Ulyasutai
Ulyasutai R.
Khirgis Steppe
Khirgis Desert
Altai Mts.
Altai
Mongolia
Gobi or Shamo Desert
Gobi
Khingan Range
Great Khingan Mts.
Little Khingan Mts.
Sungari R.
Sungari
Amur R.
Amur
Nikolaievsk
Mouth of the Amur R.
Tatar Strait
Gulf of Tartary
Sakhalin Island
Cape Elisabeth
Cape Terpeniya
Cape Lopatka
Kamchatka Bay
Petropavlovsk
Avatcha Bay
Gulf of Kronotski
Cape Shipounski
Cape Ilratkoi
Paramushir I.
Onnekotan I.
Kurile Islands
Kurile Strait
Sea of Okhotsk
Sea of Japan
Japan
Tokio
Fukuyama
Nagasaki
Kagoshima
Formosa
Liu Kiu Islands
Bonin Islands
Volcano Is.
Pescadores Is.
Pescadores Channel
Formosa Channel
Bashi Channel
Babuyan Channel
Balintang Channel
Luzon Strait
Luzon
Philippine Is.
Philippine Sea
Pacific Ocean
Caroline Is.
Pelew Is.
Marianne Is.
Guam
Marianne Trench
Yap
Ponape
Ponape I.
Mortlock Is.
Ocean I.
Nauru I.
Gilbert Is.
Marshall Is.
Ellice Is.
Fiji Is.
Tonga Is.
Samoa Is.
Solomon Is.
Bismarck Archipelago
New Britain
New Ireland
New Hanover
Admiralty Is.
New Guinea
Papua
Torres Strait
Arafura Sea
Timor Sea
Timor
Timor Laut
Banda Sea
Ceram Sea
Ceram
Celebes
Celebes Sea
Celebes Strait
Molucca Passage
Molucca Sea
Halmahera
Gilolo
Gilolo Strait
Obi
Obi Strait
Obi Major
Obi Minor
Batchian
Batchian Strait
Ternate
Tidore
Morotai
Morotai Strait
Jilolo Strait
Jilolo
Jilolo Channel
Sula Is.
Sula Archipelago
Sula Mangoli
Sula Besi
Sula Taliabu
Buru
Buru Strait
Amboina
Amboina Strait
Amboina Bay
Ceram
Ceram Strait
Ceram Laut
Ceram Laut Strait
Goram
Goram Strait
Goram Laut
Goram Laut Strait
Kei Is.
Kei Islands
Kei Strait
Kei Laut
Kei Laut Strait
Aru Is.
Aru Islands
Aru Strait
Aru Bay
Aru Laut
Aru Laut Strait
Arafura Sea
Timor Sea
Timor
Timor Laut
Timor Laut Strait
Timor Laut Islands
Timor Laut Sea
Timor Laut Channel
Timor Laut Bay
Timor Laut Peninsula
Timor Laut Mountains
Timor Laut Plateau
Timor Laut Valley
Timor Laut River
Timor Laut Lake
Timor Laut Swamp
Timor Laut Desert
Timor Laut Forest
Timor Laut Grassland
Timor Laut Savanna
Timor Laut Tundra
Timor Laut Ice Cap
Timor Laut Glacier
Timor Laut Volcano
Timor Laut Earthquake
Timor Laut Tsunami
Timor Laut Typhoon
Timor Laut Hurricane
Timor Laut Cyclone
Timor Laut Monsoon
Timor Laut Trade Wind
Timor Laut Current
Timor Laut Tide
Timor Laut Wave
Timor Laut Storm
Timor Laut Weather
Timor Laut Climate
Timor Laut Rainfall
Timor Laut Temperature
Timor Laut Humidity
Timor Laut Pressure
Timor Laut Wind
Timor Laut Speed
Timor Laut Direction
Timor Laut Force
Timor Laut Scale
Timor Laut Chart
Timor Laut Map
Timor Laut Survey
Timor Laut Navigation
Timor Laut Pilot
Timor Laut Guide
Timor Laut Book
Timor Laut Publication
Timor Laut Author
Timor Laut Date
Timor Laut Edition
Timor Laut Volume
Timor Laut Page
Timor Laut Index
Timor Laut Table
Timor Laut Figure
Timor Laut Plate
Timor Laut Diagram
Timor Laut Illustration
Timor Laut Photograph
Timor Laut Engraving
Timor Laut Lithograph
Timor Laut Printing
Timor Laut Publisher
Timor Laut Place
Timor Laut Year
Timor Laut Century
Timor Laut Era
Timor Laut Period
Timor Laut Epoch
Timor Laut Age
Timor Laut Time
Timor Laut History
Timor Laut Geography
Timor Laut Geology
Timor Laut Biology
Timor Laut Botany
Timor Laut Zoology
Timor Laut Ethnology
Timor Laut Anthropology
Timor Laut Archaeology
Timor Laut Philology
Timor Laut Linguistics
Timor Laut Literature
Timor Laut Art
Timor Laut Music
Timor Laut Religion
Timor Laut Mythology
Timor Laut Folklore
Timor Laut Customs
Timor Laut Manners
Timor Laut Dress
Timor Laut Food
Timor Laut Drink
Timor Laut Tobacco
Timor Laut Opium
Timor Laut Rice
Timor Laut Sugar
Timor Laut Coffee
Timor Laut Tea
Timor Laut Cocoa
Timor Laut Spices
Timor Laut Fruits
Timor Laut Vegetables
Timor Laut Grains
Timor Laut Cereals
Timor Laut Pulses
Timor Laut Oils
Timor Laut Fats
Timor Laut Sugars
Timor Laut Starches
Timor Laut Proteins
Timor Laut Carbohydrates
Timor Laut Vitamins
Timor Laut Minerals
Timor Laut Metals
Timor Laut Gold
Timor Laut Silver
Timor Laut Copper
Timor Laut Iron
Timor Laut Steel
Timor Laut Tin
Timor Laut Lead
Timor Laut Zinc
Timor Laut Nickel
Timor Laut Aluminium
Timor Laut Platinum
Timor Laut Mercury
Timor Laut Coal
Timor Laut Petroleum
Timor Laut Natural Gas
Timor Laut Salt
Timor Laut Sulphur
Timor Laut Phosphates
Timor Laut Nitrates
Timor Laut Potash
Timor Laut Soda
Timor Laut Lime
Timor Laut Cement
Timor Laut Clay
Timor Laut Sand
Timor Laut Gravel
Timor Laut Stone
Timor Laut Marble
Timor Laut Granite
Timor Laut Slate
Timor Laut Limestone
Timor Laut Sandstone
Timor Laut Shale
Timor Laut Coal Measures
Timor Laut Carboniferous
Timor Laut Devonian
Timor Laut Silurian
Timor Laut Ordovician
Timor Laut Cambrian
Timor Laut Precambrian
Timor Laut Archaean
Timor Laut Proterozoic
Timor Laut Palaeozoic
Timor Laut Mesozoic
Timor Laut Cenozoic
Timor Laut Quaternary
Timor Laut Tertiary
Timor Laut Pliocene
Timor Laut Miocene
Timor Laut Oligocene
Timor Laut Eocene
Timor Laut Palaeocene
Timor Laut Cretaceous
Timor Laut Jurassic
Timor Laut Triassic
Timor Laut Permian
Timor Laut Carboniferous
Timor Laut Devonian
Timor Laut Silurian
Timor Laut Ordovician
Timor Laut Cambrian
Timor Laut Precambrian
Timor Laut Archaean
Timor Laut Proterozoic
Timor Laut Palaeozoic
Timor Laut Mesozoic
Timor Laut Cenozoic
Timor Laut Quaternary
Timor Laut Tertiary
Timor Laut Pliocene
Timor Laut Miocene
Timor Laut Oligocene
Timor Laut Eocene
Timor Laut Palaeocene
Timor Laut Cretaceous
Timor Laut Jurassic
Timor Laut Triassic
Timor Laut Permian

BAY OF BENGAL
ANDAMAN
TEN DEGREE CHANNEL
NICOBAR ISLANDS
Great Nicobar I.
Little Nicobar I.
Batti Malv I.
Kamorta I.
Trinkat I.
Car Nicobar I.
Sombrero Channel
Preparis North Channel
Preparis South Channel
Great Coco I.
Coco Channel
Cape Negrais
Diamond I.
Mouths of the Irrawaddy
Gulf of Martaban
Mouths of the Rahmapootra
Moulmein
Bluff Point
Kyouk Phyoo
Ramree I.
Cheduba I.
Sandoway
Akyab
Jaggernaut Shoals
Chilka Lake
Pagoda Point
Rangoon
Bassein or Persaim
Elephant Pt.
Negrais
Tavoy
Mergui
Victoria Point
Table I.
Domel I.
Elphinstone I.
Huntress I.
Sullivan I.
Interview I.
Flat Rock
Invisible Bank
Archipelago
North Andaman I.
Middle Andaman I.
South Andaman I.
East I.
Rutland I.
Duncan Passage
Little Andaman I.
Barren I.
Narcondam I.
Saddle Peak
Mt. Diavolo
Mt. Koyoba
Mt. Harriet
Port Blair
Port Cornwallis
Chatham I.
Corbyn's Cove
Ritchie's Archipelago
Interview I.
Flat Rock
Invisible Bank
Archipelago
Sullivan I.
Domel I.
Elphinstone I.
Huntress I.
Mergui
Tavoy
Victoria Point
Table I.
Kisseraing I.
Mapoon I.
Tenasserim
Amherst
Martaban
Gulf of Martaban
Moulmein
Salween R.
Thatone
Bassein
Rangoon
Pegu
Prome
Henzada
Donabew
Thayetmyo
Sandoway
Akyab
Cheduba I.
Ramree I.
Kyouk Phyoo
Bluff Point
Gwa
Cape Negrais
Diamond I.
Mouths of the Irrawaddy
Preparis North Channel
Preparis South Channel
Great Coco I.
Coco Channel
North Andaman I.
Middle Andaman I.
South Andaman I.
East I.
Rutland I.
Duncan Passage
Invisible Bank
Flat Rock
Archipelago
Little Andaman I.
Ten Degree Channel
Car Nicobar I.
Batti Malv I.
Kamorta I.
Trinkat I.
Nancowry Harbour
Teressa I.
Katchal I.
Sombrero Channel
Little Nicobar I.
Great Nicobar I.
Islands
Bran I.
Sumatra Passage
Sumatra
Cape North
Si Malo or Hog I.
Ranyan Is.
Straits of Malacca
Dutch States
Malay States
Singapore I. and Str.
Bintang I. (Br.)
Natuna Islands
Great Natuna I.
Cape Datu
Kuching
Sarawak
Labuan
Brunei
Borneo
North Borneo
Sulu Archipelago
Sulu Sea
Cape Bolinao
Cape Bojeador
Cape Engaño
Luzon
Manila
Philippine Islands
Mindoro I.
Calamianes Is.
Panay I.
Tablas I.
Mindanao
Basilan I.
Zamboanga
Celebes Sea
Molucca Passage
Gilolo Passage
Celebes
Ceram
Xulla Is.
Obi I.
Morty Isle
Waigiou I.
Dutch New Guinea
New Guinea
Kaiser Wilhelms Land
German Territory of Papua (British)
Gulf of Papua
Port Moresby
Yule I.
Basilaki I.
Woodlark I.
Egum I.
Nivani I.
Nukufetau I.
Caroline Islands
Pelew Islands
Heck Reef
Nevil I.
Gardner Reef
Admiralty Islands
Marianne Islands
Guam I.
Tropic of Cancer
Equator
Formosa Channel
Pescadores
Taiwan
Fokmosa
Japan
Bashee Channel
Balintang Channel

ASIA
SCALES
Statute Miles, 300=1 Inch.
0 50 100 200 300 400 500 600 700 800
Kilometres, 480=1 Inch.
0 100 200 300 400 500 600 700 800 900 1000 1100 1200
Railroads
Projected Railroads
Copyright by Rand-McNally & Co.
1916
For MALAYSIA See Map of Oceania and Malaysia.
Longitude East of Greenwich
40° 50° 60° 70° 80° 90°
EQUATOR
ARABIAN SEA
BAY OF BENGAL
INDIAN OCEAN
RED SEA
GULF OF ADEN
GULF OF OMAN
PERSIAN GULF
ABYSSINIA
SOMALILAND
ARABIA
INDIA
PERSIA
AFGHANISTAN
BALUCHISTAN
BRITISH INDIA
EAST TURKESTAN
Cape Guardafui
SOCOTRA I.
Muscat
Bombay
Madras
Colombo
Pondicherry
Karikal (Fr.)
Mahé (Fr.)
Calicut
Cochin
Trivandrum
Point Pedro
Aden
Hodeida
Mocha
Jeddah
Suakin
Khartum
Nile R.
Blue Nile
White Nile
Karachi
Quetta
Kabul
Kandahar
Herat
Peshawar
Lahore
Delhi
Jodhpur
Jeypore
Agra
Allahabad
Lucknow
Calcutta
Rangoon
Mandalay
Andaman Islands
Nicobar Islands
Laccadive Islands
Maldive Islands
Ceylon
Adam's Bridge
Gulf of Manaar
Palk Strait
Pamban Pass
Nine Degree Channel
Eight Degree Channel
Great Indian Desert
Thar or Roba el Khali (Sandy Desert)
Hadramut
Mahra
Qara Mts.
Jebel Akhdar
Oman
Mekran
Sind
Punjab
Rajputana
Deccan
Ghats
Himalaya Mts.
Hindu Kush
Pamir
Tsaidam
Gobi Desert
Takla Makan Desert
Kara Kum Desert
Kara Kum
Aden Protectorate
Perim I.
Socotra I.
Kamaran I.
Farasan Is.
Dahlak Archipelago
Massawa
Suez
Gulf of Suez
Sinai Pen.
Mt. Sinai
Jebel Shammar
Nefud Desert
Arabian Desert
Rub al Khali
Hejaz
Asir
Yemen
Sana
Muscat
Gulf of Oman
Strait of Hormuz
Persian Gulf
Shatt el Arab
Euphrates R.
Tigris R.
Mesopotamia
Basra
Baghdad
Mosul
Kirkuk
Tehran
Isfahan
Shiraz
Kerman
Bandar Abbas
Lake Urmia
Lake Van
Lake Hamun
Lake Baikal
Lake Balkash
Lake Aral
Lake Issyk Kul
Lake Tiberias
Dead Sea
Jordan R.
Jerusalem
Damascus
Beirut
Haifa
Acre
Tripoli
Aleppo
Euphrates Valley Railway
Hejaz Railway
Baghdad Railway
Trans-Persian Railway
Trans-Caspian Railway
Trans-Siberian Railway
Orenburg-Tashkent Railway
Transcaspian Railway
Samarkand-Andijan Railway
Tashkent-Orsk Railway
Trans-Aral Railway
Turkestan-Siberian Railway
Kashgar-Yarkand Railway
Kashgar-Andijan Railway
Kashgar-Aksu Railway
Kashgar-Khotan Railway
Kashgar-Yangi Hissar Railway
Kashgar-Yarkand-Khotan Railway
Kashgar-Yarkand-Aksu Railway
Kashgar-Yarkand-Yangi Hissar Railway
Kashgar-Yarkand-Andijan Railway
Kashgar-Yarkand-Tashkent Railway
Kashgar-Yarkand-Orsk Railway
Kashgar-Yarkand-Trans-Aral Railway
Kashgar-Yarkand-Turkestan-Siberian Railway
Kashgar-Yarkand-Kashgar-Yangi Hissar Railway
Kashgar-Yarkand-Kashgar-Andijan Railway
Kashgar-Yarkand-Kashgar-Tashkent Railway
Kashgar-Yarkand-Kashgar-Orsk Railway
Kashgar-Yarkand-Kashgar-Trans-Aral Railway
Kashgar-Yarkand-Kashgar-Turkestan-Siberian Railway

ARCTIC OCEAN
NOVAYA ZEMLYA
KARA SEA
BARENTS SEA
BALTIC SEA
NORWAY
SWEDEN
FINLAND
RUSSIA
SIBERIA
ARCTIC CIRCLE
WHITE SEA
GULF OF FINLAND
GULF OF BOTHNIA
LAKE LADOGA
LAKE ONEGA
KOLA PENINSULA
KANINSKAI PENINSULA
GULF OF CHESHSKAYA
KOLGUEV ISLAND
VAIGACH I.
MALAY'A ZEMLYA TUNDRA
PAE-CHOI MTS.
ARCHANGEL
LEABORG
NOVGOROD
PETROGRAD
MOSCOW
VOLOGDA
KOSTROMA
VIATKA
PERM
NIZHNI NOVGOROD
VLADIMIR
SMOLENSK
KAZAN
ORENBURG
PENZA
SIMBIRSK
STOCKHOLM
HELSINGFORS
GERMAN EMPIRE

RUSSIA
SCALES
Statute Miles, 100 — 1 Inch.
Kilometres, 161 — 1 Inch.
Copyright by Rand, McNally & Co.
1916
Longitude East from Greenwich
BLACK SEA
SEA OF AZOV
CASPIAN SEA
ARCTIC OCEAN
BALTIC SEA
ÆGEAN SEA
SEA OF MARMORA
Gulf of Finland
Gulf of Bothnia
Gulf of Riga
Gulf of Perekop
Gulf of Kuma
Gulf of Agrakhan
Sea of Aral
Lake Van
Lake Urumiah or Shahi
Caspian Depression (81 feet below Sea Level)
Mouths of the Volga
Mouths of the Danube
Mouths of the Ural
Kerch Strait
Bosporus
Dardanelles
Sea of Marmora
Constantinople
Sebastopol
Novorossiysk
Batum
Baku
Petrovsk
Derbend
Astrakhan
Saratov
Samara
Orenburg
Moscow
St. Petersburg
Warsaw
Kiev
Odessa
Kharkov
Rostov
Tiflis
Erivan
Elisabethpol
Kars
Erzerum
Trebizond
Sinope
Amasera
Angora
Smyrna
Athens
Constantinople
Adrianople
Salonika
Sofia
Bucharest
Constanta
Varna
Philippopolis
Jamboli
Burgas
Shumla
Rustchuk
Turtukai
Silistria
Galatz
Ismail
Reni
Kilia
Akkerman
Tiraspol
Kishinev
Bender
Jassy
Lemberg
Tarnopol
Brody
Dubno
Rovno
Zhitomir
Kiev
Tchernigov
Poltava
Kharkov
Kursk
Orel
Tula
Moscow
Smolensk
Vitebsk
Minsk
Grodno
Bialystok
Brest-Litovsk
Kovno
Mitau
Libau
Windau
Riga
Dorpat
Reval
Narva
Petrograd
Helsingfors
Abo
Wasa
Uleaborg
Tornea
Haparanda
Gefle
Stockholm
Upsala
Orebro
Karlstad
Christiania
Drontheim
Bergen
Stavanger
Christiansand
Copenhagen
Elsinore
Odense
Aarhus
Aalborg
Skagen
Ribe
Esbjerg
Flensburg
Kiel
Lubeck
Hamburg
Bremen
Emden
Leer
Groningen
Leeuwarden
Amsterdam
Haarlem
Leyden
Rotterdam
The Hague
Utrecht
Arnhem
Nijmegen
Zwolle
Enschede
Deventer
Apeldoorn
Hilversum
Gouda
Dordrecht
Middelburg
Flushing
Ostend
Bruges
Ghent
Antwerp
Brussels
Louvain
Liege
Namur
Charleroi
Mons
Tournai
Lille
Roubaix
Tourcoing
Valenciennes
Cambrai
Arras
Boulogne
Calais
Dunkirk
Abbeville
Amiens
Compiegne
Soissons
Rheims
Sedan
Metz
Thionville
Longwy
Nancy
Toul
Verdun
Commercy
Bar-le-Duc
Chalons
Epernay
Meaux
Paris
Versailles
Rouen
Le Havre
Dieppe
Fecamp
Caen
Cherbourg
Granville
St. Malo
Dinan
Lannion
Morlaix
Brest
Quimper
Lorient
Vannes
Quiberon
Nantes
St. Nazaire
Les Sables d'Olonne
La Rochelle
Rochefort
Royan
Pauillac
Bordeaux
Arcachon
Biarritz
Bayonne
St. Jean de Luz
Hendaye
Irun
San Sebastian
Bilbao
Santander
Gijon
Oviedo
Leon
Valladolid
Palencia
Burgos
Miranda
Vitoria
Pamplona
Tudela
Logrono
Zaragoza
Huesca
Lerida
Tarragona
Barcelona
Gerona
Figueras
Port Bou
Cerbere
Perpignan
Narbonne
Carcassonne
Toulouse
Montauban
Agen
Bergerac
Perigueux
Angouleme
Cognac
Saintes
Rochefort
La Rochelle
Niort
Poitiers
Chatellerault
Tours
Orleans
Blois
Vendome
Le Mans
Alencon
Argentan
Falaise
Bayeux
Lisieux
Evreux
Dreux
Chartres
Rambouillet
Fontainebleau
Melun
Provins
Troyes
Chaumont
Langres
Dijon
Beaune
Chalon-sur-Saone
Macon
Lyon
Vienne
Grenoble
Valence
Montelimar
Orange
Avignon
Arles
Nimes
Montpellier
Beziers
Sete
Agde
Cette
Marseilles
Toulon
Hyeres
Cannes
Nice
Monaco
Mentone
Ventimiglia
San Remo
Oneglia
Porto Maurizio
Savona
Genoa
Spezia
Leghorn
Pisa
Lucca
Florence
Pistoia
Prato
Bologna
Modena
Reggio
Parma
Piacenza
Milan
Como
Lecco
Bergamo
Brescia
Verona
Mantua
Cremona
Pavia
Novara
Vercelli
Turin
Susa
Pinerolo
Alessandria
Asti
Ivrea
Aosta
Chambery
Annecy
Geneva
Lausanne
Montreux
Martigny
Sion
Brig
Interlaken
Thun
Berne
Fribourg
Neuchatel
Biel
Basle
Zurich
Winterthur
Schaffhausen
Constance
Lucerne
Altdorf
Bellinzona
Lugano
Chiasso
Como
Milan
Innsbruck
Bregenz
Feldkirch
Landeck
Reutte
Kufstein
Salzburg
Linz
Passau
Munich
Augsburg
Ulm
Stuttgart
Heidelberg
Mannheim
Karlsruhe
Strasbourg
Colmar
Mulhouse
Belfort
Besancon
Dole
Auxonne
Nuits
Autun
Moulins
Nevers
Bourges
Vierzon
Issoudun
Chateauroux
Limoges
Brive
Tulle
Aurillac
Figeac
Cahors
Montauban
Castelnaudary
Carcassonne
Narbonne
Beziers
Montpellier
Nimes
Arles
Tarascon
Aix

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY

HC
335
U653
1913

United States. Bureau of Foreign and Domestic Commerce
Russia : a handbook on commercial and industrial conditions

UTL AT DOWNSVIEW
D RANGE BAY SHLF POS ITEM C
39 10 24 25 14 003 4